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F

Prelims Marathon

August, 2022

*HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT*

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Schemes/ Programmes/ Institutions

Q.1) Which among the following institute has prepared Report on State of Inequality in India?

- a) NITI Aayog
- b) Economic Advisory Council
- c) Ministry of Social Justice
- d) Institute of competitiveness

ANS: C

Explanation: The Economic Advisory Council to the Prime Minister has released a Report on the State of Inequality in India. The Report has presented a holistic analysis of the depth and nature of inequality in India. Among its various recommendations, the Report has advocated the provision of Universal Basic Income as an elementary safety net.

Report on the State of Inequality in India

- The Report has been prepared by the **Institute of Competitiveness, India**. It is the Indian subsidiary of the global network of the **Institute for Strategy and Competitiveness of the Harvard Business School**.
- **Purpose:** The report presents a holistic analysis of the depth and nature of inequality in India.
- **Focus Areas:** The report looks at five key areas that **influence the nature and experience of inequality**.
 - Income distribution
 - Labour Market Dynamics
 - Health,
 - Education
 - Household Characteristics.
- **Source of Data:** The report is based on the data derived from various rounds of the Periodic Labour Force Survey (PLFS), National Family Health Survey (NFHS) and UDISE+.

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Source: EPIC June 2022

Q.2) Which of the following institution has released a document of the inclusion of LGBTIQ+ persons in the world of work?

- a) World Bank
- b) Human Rights Council
- c) WEF
- d) ILO

ANS: D

Explanation: The ILO has released a document on 'Inclusion of Lesbian, Gay, Bisexual, Transgender, Intersex and Queer (LGBTIQ+) persons in the world of work. The document provides recommendations to ensure equal opportunities and treatment of LGBTIQ+ persons at work.

What are the recommendations on the inclusion of LGBTIQ+ community?

Around the world, LGBTIQ+ persons face harassment, violence and discrimination on the basis of sexual orientation, gender identity, gender expression and sex characteristics. This discrimination has an economic cost not just to LGBTIQ+ persons and their families but also to enterprises and national economies. So ILO has made some recommendations to enhance inclusion of LGBTIQ+ people:

- Launch social protection programmes
- Social dialogue with employers' and workers' organisations
- Focus on the informal economy
- End sexual discrimination
- Role of Trade unions

Source: EPIC June 2022

Q.3) Consider the following statements:

1. The Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines mention Green Cities under the urban planning approach.
2. The Urban Agriculture is part of the Urban Land Planning (ULP) exercise.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Utility of Urban Agriculture:

Cities in India are facing multiple challenges including unbearable heat-waves due to climate change. Urban Agriculture can not only mitigate the impacts of climate change but has several additional benefits.

How can the problem be addressed?

- (1) Environmentalists and urban city planners highlight the importance of Green Infrastructure (GI) in combating the impact of climate change in cities. The Union Government's 2015 AMRUT programme also included green spaces and parks as a thrust area;
- (2) In this context, Agriculture is a neglected aspect. Agriculture is seen as a predominantly rural activity. The Urban and Regional Development Plans Formulation and

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Implementation (URDPFI) guidelines mention Green Cities under the urban planning approach, with prevention of damage to 'productivity of agricultural land' listed as a key benefit. However, the Urban Agriculture is not part of the Urban Land Planning (ULP) exercise.

Source: EPIC June 2022

Q.4) Consider the following statements with respect to Miscarriage of Justice in India:

1. The report observed that 25.1% of the total under-trials spent more than a year in prison.
2. The currently available remedies create statutory obligation on the State to compensate.

Which of the following statement is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: What are the statistics related to under-trials in prisons?

- (1) India has one of the highest number of under-trial prisoners in India. In 2020, India was ranked 15 out of 217 countries on the basis of its under-trial population as per the World Pre-trial/Remand Imprisonment List;
- (2) According to the National Judicial Data Grid there are approximately 30.8 million criminal cases proceeding in the district courts of the country.
- (3) According to the NCRB (Prison Statistics India, 2020), out of India's total of 4,88,511 prisoners (December 2020); 371,848 persons (76.1%) were under-trials (persons who have been committed to judicial custody pending investigation or trial by a competent authority);
- (4) The Law Commission in its 277th Report (Wrongful Prosecution (Miscarriage of Justice): Legal Remedies, 2018) has dealt with the issue of wrong prosecution in detail. The report observed that 25.1% of the total under-trials spent more than a year in prison (based on Prison Statistics India, 2015);

The Law Commission in its 277th Report (2018), noted that 'the currently available remedies only create an ex-gratia obligation, and not a statutory obligation on the State to compensate'. Thus, at present, the provision of compensation is subject to the discretion of the Judiciary (or NHRC), rather than a legal obligation of the Executive.

'Miscarriage of Justice'

The Law Commission in its 277th Report 'Wrongful Prosecution (Miscarriage of Justice): Legal Remedies' observes that the expression 'Miscarriage of Justice' is of wide amplitude:

- Errors in the interpretation, procedure, or execution of the law; typically, **errors that violate due process**, often resulting in the **conviction of innocent people**.

The Supreme Court has interpreted the term in multiple ways:

- '*Departure from the rules that permeates all judicial procedure*'.
- '*Misconception of law, irregularity of procedure, neglect of proper precaution*' leading to **some underserved hardship to individuals**.
- Lack of judicial approach, non-application of mind, non-consideration or improper consideration of material evidence.
- If a judgment is unreasonable, based on an erroneous understanding of the law and of the facts of the case.
- Non-compliance of the principles of Natural Justice.

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Source: EPIC June 2022

Q.5) Which of the following is/are a pillar of Indo-Pacific Economic Framework (IPEF)?

1. Supply Chain Resilience
2. Tax and anti-corruption
3. Clean energy and decarbonisation

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: Indo-Pacific Economic Framework (IPEF)

The Indo-Pacific Economic Framework was launched at the QUAD Leader's Summit in Tokyo. IPEF is being seen as the US' response to other trade pacts in the region like CPTPP and the RCEP. IPEF is expected to enhance economic cooperation and establish rules-based order in the Indo-Pacific.

The framework has 4 pillars: (a) Trade; (b) Supply Chain Resilience; (c) Clean energy and decarbonisation; (d) Tax and anti-corruption

Four Pillars of IPEF

- **Trade:** It will include digital economy and emerging technologies, labour commitments, environment, trade facilitation, transparency, good regulatory practices, corporate accountability, standards on cross-border data flows and data localisations.
- **Supply Chain Resilience:** Its purpose is to develop 'a first-of-its-kind supply chain agreement' that would **anticipate and prevent disruptions**.
- **Clean Energy and Decarbonization:** It will include agreements on 'high-ambition commitments' such as renewable energy targets, carbon removal purchasing commitments, energy efficiency standards, and new measures to combat methane emissions.
- **Tax and Anti-Corruption:** It includes commitments to enact and enforce 'effective tax, anti-money laundering, anti-bribery schemes in line with [American] values'

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Source: EPIC June 2022

Q.6) Consider the following statements about Vernacular Innovation Program (VIP):

1. It is launched by Atal Innovation Mission (AIM) and the NITI Aayog.
2. It will enable innovators and entrepreneurs in India to have access to the innovation ecosystem in 8 classical languages.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: About Vernacular Innovation Program (VIP):

- Atal Innovation Mission (AIM) and the NITI Aayog have launched the Vernacular Innovation Program (VIP) to enable innovators and entrepreneurs in India to have access to the innovation ecosystem in 22 scheduled languages by the Government of India.
- AIM will be training a Vernacular Task Force (VTF) in each of the 22 scheduled languages with each task force consisting of vernacular language teachers, subject experts and technical writers.
- According to the 2011 census, only 10.4% of Indians speak English, most as their second, third, or fourth language. Only 0.02% of Indians spoke English as their first language.

Source: EPIC December 2021

Q.7) Innocenti Declaration is related to which of the following?

- a) Breastfeeding
- b) Breast cancer
- c) Ovarian cancer
- d) Postpartum hemorrhage

ANS: A

Explanation: About Innocenti Declaration:

- It was signed in August 1990 during the WHO and UNICEF policymakers' meeting on 'Breastfeeding in the 1990s: A Global Initiative' in Italy.
- The Innocenti Declaration says that all women should be enabled to practise exclusive breastfeeding and all infants should be fed exclusively on breastmilk up to 4-6 months of age 'as a global goal for optimal maternal and child health and nutrition'.

Source: EPIC December 2021

Q.8) Ministry of Science & Technology has launched India's first Virtual Science Lab for children under which of the following schemes?

- a) SEED Programme
- b) Kishore Vaigyanik Protsahan Yojana (KVPY)
- c) Jigyasa programme
- d) None

ANS: C

Explanation: About CSIR Jigyasa Programme:

- The Union Minister of Science & Technology has launched India's first Virtual Science Lab for children under CSIR Jigyasa programme.
- The aim is to provide quality research exposure and innovative pedagogy for school students to drive their scientific curiosity based on an online interactive medium.
- Virtual Lab will provide virtual tour of CSIR laboratories, interaction with scientists to clear doubts, Access content in regional languages; Project based support; Simulation Experiments; Science based webinars; Student Entrepreneurship etc

Source: EPIC November 2021

Q.9) Consider the following statements regarding International Centre for Settlement of Investment Disputes (ICSID):

1. It was set up in 1966 is an investment dispute settlement body whose decisions are binding on the parties.
2. India is not a member of ICSID.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The International Centre for Settlement of Investment Disputes (ICSID), set up in 1966 is an investment dispute settlement body whose decisions are binding on the parties.

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- It was established under the 1966 Convention on the Settlement of Investment Disputes between States and Nationals of Other States.
- Though recourse to the centre is voluntary, but once the parties have agreed to arbitration, they cannot withdraw their consent unilaterally.
- It settles the investment disputes arising between the investing foreign companies and the host countries where the investments have been done.
- India is not its member (that is why the Enron issue was out of its preview). It is believed that being signatory to it encourages the foreign investment flows into an economy, but risks independent sovereign decisions, too.

Source: Sriram's IAS

Q.10) Consider the following statements about National Atlas & Thematic Mapping Organisation (NATMO):

1. Its primary function is compilation of the National Atlas of India in English only.
2. It is headquartered in Kolkata.
3. It functions under Ministry of Science and Technology.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) 2 and 3 only
- d) None

ANS: C

Explanation: About National Atlas & Thematic Mapping Organisation (NATMO):

- NATMO was established in 1997.
- It is a subordinate department under the Department of Science & Technology, Ministry of Science & Technology.
- Its primary function is compilation of the National Atlas of India in Hindi, English and other regional languages. It is headquartered in Kolkata.

Source: EPIC January 2022

Science

Q.1) Which of the following is the chemical name of bleaching powder?

- a) Calcium oxide
- b) Sodium hydrogen carbonate
- c) Sodium bicarbonate
- d) Calcium oxychloride

ANS: D

Explanation: Bleaching Powder

- It is also called as the chloride of lime. The chemical formula of bleaching powder is calcium oxychloride.
- It is prepared by passing chlorine gas over dry slaked lime.

Properties of Bleaching Powder

- It is a white powder which gives strong smell of chlorine.
- It is soluble in cold water.
- It reacts with dilute acids to produce chlorine. When bleaching powder is treated with an excess of a dilute, all the chlorine present in it is liberated.

Uses of Bleaching Powder

- It is used for bleaching cotton and linen in textile industry.
- It is used for bleaching wood pulp in paper industry.
- It is used for disinfecting drinking water supply.
- It is used in the manufacture of chloroform.
- It is used to make wool unshrinkable.
- It is used as an oxidising agent in many chemical industries.

Source: NCERT Class 10

Q.2) Which of the following is the chemical name of laughing gas?

- a) Dinitrogen tetroxide
- b) Methane
- c) Nitrous oxide
- d) Ammonium Nitrate

ANS: C

Explanation: Nitrous oxide

- The nitrous oxide which is commonly known as laughing gas.
- Nitrous oxide is inflammable gas colourless in the room temperature.
- A scientist named Humphry Davy, gives nitrous oxide the name of laughing gas. It is given so because if this inhaled then it caused an effect of immense happiness and pleasure.
- Nitrous oxide is having a sweet odour. It is also non-toxic gas. World health organisation referred to this gas as one of the safest gas that can be used in the human being.

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- Nitrous oxide is obtained in the industry by heating the ammonium nitrate in the temperature of 250°C, this compound gets decomposed into nitrous oxide and water vapour.

Uses:

- This gas has been allowed to be used in the food additives. It is used in the cooking sprays and the whipped cream.
- Cooking spray is made up of various combinations of different types of oils and thus used as propellant. The whipped cream which is made up of nitrous oxide are quite unstable.
- The gas is used because it is extremely soluble in the fatty compounds and due to which in case of aerosol whipped cream.
- It gets dissolved in the fatty cream when present in the can, when it leaves the can it becomes gaseous and thus produced foam.
- Nitrous oxide as anaesthetic cannot be used alone because it is weak anaesthetic.
- It is used as a carrier for other strong anaesthetic compounds which are used in the medical field.
- It is also used in the time of childbirth, oral surgery, trauma and acute coronary syndrome.

Source: NCERT Class 12

Q.3) Consider the following pairs:

Common Name	Chemical Name
-------------	---------------

- | | |
|---------------------|--------------------|
| 1. Galena | Lead Sulphide |
| 2. Green vitriol | Copper sulphate |
| 3. Plaster of Paris | Calcium sulphate |
| 4. Calomel | Mercurous Chloride |

How many pairs are correctly matched?

- One pair only
- Two pairs only
- Three pairs only
- All the four pairs

ANS: C

Explanation:

Common Name	Chemical Compounds/Elements	Uses
Baking Soda	Sodium Hydrogen Carbonate or Sodium bicarbonate	It is used as an ingredient in baking.
Antiformin/ Bleach/ Chloride of Soda	Sodium hypochlorite	It is used on a large scale for surface purification, bleaching, odour removal and water disinfection.
Bleaching Powder	Calcium Oxychloride	It is used as a bleaching agent and disinfectant.
Blue Vitriol	Copper Sulphate	It is used to control fungus and algae.
Borax	Sodium tetraborate decahydrate/ Sodium Borate	It is used in laundry detergent.

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Calomel	Mercurous chloride	It is used as a fungicide, and formerly in medicine as a purgative.
Carbolic Acid/ Hydroxybenzene/ Phenic Acid	Phenol	It is used as a disinfectant in household cleaners.
Carborundum	Silicon carbide	It is used in automotive brakes and clutches.
Caustic potash	Potassium hydroxide	It is used in liquid fertilizers, potassium soaps and detergents.
Chile Saltpetre	Sodium Nitrate	It is used for making high-strength glasses, fertilizers and explosives.
Chloroform	Trichloromethane	It is used as a solvent for lacquer, floor polishes and resins.
Cream of tartar	Potassium hydrogen tartrate/ potassium bitartrate	It is used in bakery to stabilize egg whites.
Dolomite	Calcium magnesium carbonate	It is used as an ingredient in the production of glass, bricks, and ceramics.
Dry Ice	Solid carbon dioxide	It is used to preserve food.
Epsom salt	Magnesium sulphate heptahydrate	It is known to relieve pain and inflammation.
Freon-12/CFC-12	Dichlorodifluoromethane	It is used as a refrigerant in refrigerators and air conditioners.
Galena	Lead (II) sulphide	It is also used in a green glaze applied to pottery.
Glauber's Salt	Sodium sulphate decahydrate	It is used in medicine and as a dyeing agent.
Glycerol	Propane-1,2,3-triol	It is used in food and skin care industry.
Green Vitriol	Ferrous sulphate heptahydrate	It is used in sewage and water treatment, and as a pigment, fertilizer.
Gypsum	Calcium sulphate dihydrate	It is used to manufacture dry wall.

Source: NCERT Class 10 and 12

Q.4) With respect to setting of plaster of paris, which of the following is correct?

- a) Oxidation with atmospheric oxygen
- b) Combination with atmospheric CO₂
- c) Dehydration
- d) Hydration to yield another hydrate

ANS: D

Explanation: Plaster of Paris

- Plaster of Paris is a popular chemical substance that is utilized most commonly for sculpting materials and in gauze bandages.

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- Plaster of Paris is a white powdery chemical compound which is hydrated calcium sulphate that is usually obtained from calcining gypsum.
- The setting of plaster of Paris takes place by hydration due to the formation of a solid crystalline hydrate.
- Hardening of plaster of Paris is a hydration reaction, which is the reverse of the dehydration of gypsum.
- Plaster of Paris quickly sets to a hard mass when made into a thin paste with water.

Source: NCERT Class 10

Q.5) Which one of the following is the first organic compound prepared in the laboratory?

- a) Acetic acid
- b) Chloroform
- c) Urea
- d) Methane

ANS: C

Explanation: The first organic compound prepared in the laboratory is urea. German chemist Friedrich Wohler prepared urea in a laboratory in 1828 from ammonium cyanate. Nowadays urea is prepared commercially from liquid ammonia and liquid carbon. It is a nitrogenous compound containing a carbonyl group attached to two amine groups.

Source: NCERT Class 11- Chemistry

Q.6) Consider the following statements:

1. Sucrose is the sweetest of all naturally occurring carbohydrates.
2. Acetylene is the basic chemical building block of natural rubber.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation:

- Fructose is the sweetest of all naturally occurring carbohydrates.
- The purified form of natural rubber is the chemical polyisoprene, which can also be produced synthetically. Natural rubber is used extensively in many applications and products, as is synthetic rubber. It is normally very stretchy and flexible and extremely waterproof.

Source: NCERT Class 11- Chemistry

Q.7) Which of the following gas is used for artificial ripening of green fruit?

- a) Ethylene
- b) Ethane
- c) Carbon dioxide
- d) Acetylene

ANS: A

Explanation: Ethylene gas, acetylene gas liberated from calcium carbide, and ethephon are some of the commercial ripening agents used successfully in the trade and they have been widely studied for their effectiveness on initiating and accelerating the ripening process and their effect on fruit quality and health related issues. Green fruits are ripened by ethylene gas.

Source: NCERT 12 Chemistry

Q.8) Hydrogen bomb is based on the principle of

- a) Nuclear Fission
- b) Nuclear Fusion
- c) Natural Radioactivity
- d) Artificial Radioactivity

ANS: B

Explanation: Hydrogen Bomb is based on the principle of Nuclear Fusion.



Nuclear fusion is a reaction in which two or more atomic nuclei are combined to form one or more different atomic nuclei and subatomic particles.

The difference in mass between the reactants and products is manifested as either the release or absorption of energy.

Source: NCERT Class 10

Q.9) Which of the following is/are an example of chemical change?

1. Cooking of Food
2. Digestion of Food
3. Freezing of water
4. Water is heated up

Select the correct answer using the codes given below:

- a) 1, 2 and 4 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 2, 3 and 4 only

ANS: C

Explanation: If the chemical composition is changing then it is a chemical change and if the chemical composition is remaining the same, then it is a physical change.

- Cooking of Food ----- Chemical Change
- Digestion of Food ----- Chemical Change
- Freezing of water ----- Physical Change
- Water is heated up ----- Physical Change

Source: NCERT Class 7

Q.10) The human body is made up of several chemical elements. Which of the following element is present in the highest proportion (65%) in the body?

- a) Carbon
- b) Hydrogen
- c) Oxygen
- d) Nitrogen

ANS: C

Explanation: The human body is made up of several chemical elements. The element present in the highest proportion (65%) in the body is Oxygen.

Source: NCERT

Economy

Q.1) “Agreement on Subsidies and Countervailing measures (SCM)” is often seen in news is related to which of the following?

- a) World Bank
- b) International Monetary Fund
- c) World Trade Organization
- d) UNEP

ANS: C

Explanation: The Agreement on Subsidies and Countervailing Measures (Subsidies Agreement) of the World Trade Organization (WTO) provides rules for the use of government subsidies and for the application of remedies to address subsidized trade that has harmful commercial effects.

These remedies can be pursued through the WTO’s dispute settlement procedures, or through a countervailing duty (CVD) investigation which can be undertaken unilaterally by any WTO member government.

Source: <https://www.trade.gov/trade-guide-wto-subsidies>

Q.2) Consider the following statements regarding Ministerial Conference of the WTO:

1. It is the top decision making body of WTO.
2. It usually meets every two years.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The Ministerial Conference is the WTO’s top decision-making body and usually meets every two years. All members of the WTO are involved in the MC and they can take decisions on all matters covered under any multilateral trade agreements.

Source: FORUMIAS

Q.3) Which of the following is NOT part of World Trade Organization?

- a) Agreement on Agriculture
- b) TRIPS
- c) TRIMS
- d) Rapid Credit Facility

ANS: D

Explanation: The World Trade Organization is the only international organization that deals with the rules of trade between countries.

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- The WTO officially commenced in 1995 under the Marrakesh Agreement signed by 124 nations, replacing the General Agreement on Tariffs and Trade (GATT). Currently, it has 164 members and 23 observer governments (like Iran, Iraq, Bhutan, Libya etc).
- According to its rules, all decisions are taken through consensus and any member can exercise a veto.
- Its aim is to promote free trade, which is done through trade agreements that are discussed and signed by the member states. The WTO also provides a forum for countries to negotiate trade rules and settle economic disputes between them.

Key Agreements under the WTO

- **Agreement on Subsidies and Countervailing Measures (SCM):** The WTO SCM Agreement contains the **definition of the term 'subsidy'**. A subsidy contains three basic elements: **(a)** A financial contribution **(b)** By a Government or any public body within the territory of a Member **(c)** Confers a benefit. All three of these elements must be satisfied in order for a subsidy to exist.
- **General Agreement on Trade in Services (GATS):** The GATS was inspired by essentially the same objectives as its counterpart in merchandise trade, GATT. It aimed at **creating a credible system of international trade rules** and **ensuring fair and equitable treatment of all participants** (Principle of Non-discrimination).
- **The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS):** It sets down minimum standards for many forms of **intellectual property (IP) regulation** as applied to nationals of other WTO Members. It was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994.
- **Agreement on Agriculture:** It was concluded in 1994. It was aimed to **remove trade barriers, promote transparent market access** and **integration of global markets**. It is often criticized as a tool in the hands of developed countries to exploit weak countries. Negotiations are still going on for some of its aspects.

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Source: FORUMIAS

Q.4) Consider the following statements regarding Agreement on Trade-Related Investment Measures (TRIMs):

1. It applicable to both goods and services.
2. Local content requirement is part of the TRIMS.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Agreement, negotiated during the Uruguay Round, applies only to measures that affect trade in goods. Recognizing that certain investment measures can have trade-restrictive and distorting effects, it states that no Member shall apply a measure that is prohibited by the provisions of GATT Article III (national treatment) or Article XI (quantitative restrictions).

- The Agreement on Trade-Related Investment Measures (TRIMS) recognizes that certain investment measures can restrict and distort trade.
- It states that WTO members may not apply any measure that discriminates against foreign products or that leads to quantitative restrictions, both of which violate basic WTO principles.

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- A list of prohibited TRIMS, such as local content requirements, is part of the Agreement.
- The TRIMS Committee monitors the operation and implementation of the Agreement and allows members the opportunity to consult on any relevant matters.

Source: https://www.wto.org/english/tratop_e/invest_e/invest_info_e.htm

Q.5) “Accessions intelligence portal” is related to which of the following?

- World Bank
- World Economic Forum
- Asian Development Bank
- World Trade Organization

ANS: D

Explanation: The Accessions Intelligence Portal contains information on on-going and completed WTO accessions since 1995 as well as other accession-related information, such as how to become a WTO member, technical assistance activities, relevant publications and other resources.

Source: https://www.wto.org/english/thewto_e/acc_e/acc_e.htm

Q.6) “Poverty Reduction and Growth Trust (PRGT)” is often seen in news is related to which of the following?

- International Monetary Fund
- World Trade Organization
- World Bank
- AIIB

ANS: A

Explanation: The IMF provides broad support to low-income countries (LICs) through surveillance and capacity-building activities, as well as concessional financial support to help them achieve, maintain, or restore a stable and sustainable macroeconomic position consistent with strong and durable poverty reduction and growth. Concessional support through the Poverty Reduction and Growth Trust (PRGT) is currently interest free.

Source: <https://www.imf.org/en/About/Factsheets/IMF-Support-for-Low-Income-Countries>

Q.7) Which of the following is NOT part of International Monetary Funding (IMF) lending facilities?

- Extended Credit Facility
- Standby Credit Facility
- Rapid Credit Facility
- Development Policy Lending Facility

ANS: D

Explanation:

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All IMF members have access to the General Resources Account on non-concessional terms, but the IMF also provides concessional financial support through the (PRGT), which is better tailored to the diversity and needs of LICs. Poverty reduction strategies that detail policies to promote growth and reduce poverty are essential to IMF-supported programs in LICs. The PRGT has these three concessional lending facilities:

- **Extended Credit Facility (ECF):** Sustained medium- to long-term engagement in case of protracted balance of payments problems
- **Standby Credit Facility (SCF):** Financing for LICs with actual or potential short-term balance of payments and adjustment needs caused by domestic or external shocks, or policy slippages—can also be used on a precautionary basis during times of increased risk and uncertainty
- **Rapid Credit Facility (RCF):** Rapid financial support as a single up-front payout for low-income countries facing urgent balance of payments needs—possible repeated disbursements over a (limited) period in case of recurring or ongoing balance of payments needs.

For policy advice and signaling, countries may request nonfinancial assistance under the **Policy Support Instrument (PSI)**, which helps LICs that are in a broadly stable macroeconomic position and thus not in need of IMF financial assistance. The PSI can expedite access to the SCF if needed.

Source: <https://www.imf.org/en/About/Factsheets/IMF-Support-for-Low-Income-Countries>

Q.8) “Fiscal Monitor report” is published by which of the following?

- a) World Economic Forum
- b) World Bank
- c) International Monetary Fund
- d) UNESCO

ANS: C

Explanation: With increasing fiscal challenges in the aftermath of the global financial crisis, multilateral surveillance of fiscal developments, a key part of the IMF’s surveillance responsibilities, has gained further importance. In response, the Fiscal Monitor was launched in 2009 to survey and analyze the latest public finance developments, update fiscal implications of the crisis and medium-term fiscal projections, and assess policies to put public finances on a sustainable footing.

The Fiscal Monitor is prepared twice a year by the IMF’s Fiscal Affairs Department. Its projections are based on the same database used for the World Economic Outlook (WEO) and the Global Financial Stability Report (GFSR). The fiscal projections for individual countries have been prepared by IMF desk economists, and, in line with the WEO guidelines, assume that announced policies will be implemented.

Source: <https://www.imf.org/en/publications/fm>

Q.9) Program-for-Results (PforR) is a lending instrument of?

- a) International Monetary Fund
- b) World Bank
- c) UNEP
- d) World Trade Organization

ANS: B

Explanation: Program-for-Results (PforR) is a new lending instrument, which was approved by the World Bank's board in January 2012.

- PforR ties the disbursement of funds to the achievement of tangible development results and provides direct support for government programmes in order to help countries “strengthen institutions, build capacity, and enhance partnerships with stakeholders to achieve lasting impact”.
- According to the Bank, PforR can provide support for a wide range of government projects, such as increased immunisation coverage for children or provision of sanitation services.
- Disbursements fund expenditure programmes rather than individual transactions.
- The Bank will pilot the PforR instrument for two years, during which time eligibility for new operations will be limited to 5 per cent of annual IBRD and IDA lending (about \$1.5 billion), and category A operations (those with the highest environmental and social risks) will be excluded.
- As of September, two PforR projects of \$60 million and \$300 million had been approved.

Source: <https://www.brettonwoodsproject.org/2012/10/art->

Q.10) “Global Findex Report” is released by which of the following?

- a) World Bank
- b) IMF
- c) AIIB
- d) WEF

ANS: A

Explanation: Recently, the World Bank has released 'The Global Findex Report 2021'. The Global Findex surveys over 125,000 adults in 123 economies during Covid-19 to better understand how people use formal and informal financial services and digital payment.

Source: <https://www.worldbank.org/en/publication/globalfindex>

Polity

Q.1) Panchayats (Extension to the Scheduled Areas) Act, 1996 permits self-governance of natural resources by which of the following?

- Gram Sabha
- Gram Panchayat
- The Chairman of Gram Panchayat
- Forest dwellers of a village situated in the areas mentioned in the Fifth Schedule of the Constitution of India.

ANS: A

Explanation: Gram Sabha:

- The Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996 or PESA is a law enacted by the Government of India for ensuring self-governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.
- Gram Sabha has the power to safeguard and preserve the traditions and customs of people, their cultural identity, community resources and customary mode of dispute resolution.
- It also permits self-governance of natural resources by the Gram Sabha.
- Powers of the Gram Sabha -
 - It also has the power to approve plans, programmes and projects for social and economic development.
 - To identify persons as beneficiaries under the poverty alleviation and other programmes.
 - To give the certificate of the utilisation of funds for various plans and programmes.
- If there is an acquisition of land in these areas, Gram Sabha must be consulted. However, actual planning and implementation of the projects shall be coordinated at the state level. So, in land acquisition, the role of Panchayats in these areas is advisory only.

Source: Laxmikanth

Q.2) The Special Provisions in Article 371G of the Constitution of India relate to which of the state/UT?

- Jammu & Kashmir
- Jharkhand
- Mizoram
- Nagaland

ANS: C

Explanation: Article 371 provides a special status to the North-Eastern states.

- It aims to preserve their tribal heritage.
- Article 371G is related to the Mizoram, all acts of the Indian parliament related to the Mizo way of living will apply only after the consent of the Mizoram Assembly.
- Other useful Articles:
 - Article 371(B) – State of Assam.
 - Article 371(C)- State of Manipur.

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- Article 371(F) – State of Sikkim.
- Article 371(H) – State of Arunachal Pradesh.
- Article 371(G) – State of Mizoram.

Source: Laxmikanth

Q.3) Which of the following is/are correct regarding Urban Local Bodies in India?

1. The Constitution's 74th Amendment Act envisages three types of urban local bodies, namely Nagar Panchayat, Municipal Council, and Municipal Corporation.
2. Municipal Corporations are established in cities with a population greater than 1 million.
3. Bombay and Calcutta Corporations were the first Municipal Corporations that were established during British time.

Select the correct answer using the code given below:

- a) 1 and 2 only
- b) 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: A

Explanation:

The 74th Amendment Act of 1992 provides for the constitution of the following three types of Municipalities in every State:

- **Nagar Panchayat**- For a transitional area, i.e., an area in transition from a rural area to an Urban area.
- **Municipal Council**- For a smaller Urban Area. i.e., an Area of Population of more than 100,000.
- **Municipal Corporation**- For a larger Urban Area i.e., an area with a population of more than 1 million.
- In 1687-88, The first Municipal Corporation in India was set up at Madras.
- In 1726, municipal corporations were set up in Bombay and Calcutta.

74th Amendment Act of 1992:

- This Act added a new Part IX-A- 'The Municipalities' to the constitution of India.
- The new part consists of Provisions from Articles 243-P to 243-ZG.
- The Act also added a new Twelfth Schedule to the Constitution.
- This schedule contains 18 functional items of Municipalities and deals with Article 243-W.

Source: Laxmikanth

Q.4) Which of the following state was the first to establish Panchayati Raj in India?

- a) Madhya Pradesh
- b) Tripura
- c) Rajasthan
- d) Maharashtra

ANS: C

Explanation: Rajasthan was the first state to establish Panchayati Raj. The scheme was inaugurated by the prime minister on October 2, 1959, in Nagaur district. Rajasthan was

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followed by Andhra Pradesh, which also adopted the system in 1959. Thereafter, most of the states adopted the system.

Source: Laxmikanth

Q.5) Which of the following committees and commissions has not been appointed by the Central Government to improve the functioning of urban local governments?

- a) Rafiq Zakaria
- b) C.M Correa
- c) K.N. Sahaya
- d) S K Dhar

ANS: D

Explanation: The committees and commissions appointed by the Central Government to improve the functioning of urban local governments are mentioned below:

Table 39.1 Committees and Commissions on Urban Local Governments

Sl. No.	Year	Name of the Committee / Commission	Chairman
1.	1949–51	Local Finance Enquiry Committee	P.K. Wattal
2.	1953–54	Taxation Enquiry Commission	John Matthai
3.	1963–65	Committee on the Training of Municipal Employees	Nur-Ud-din Ahmed
4.	1963–66	Rural-Urban Relationship Committee	A.P. Jain
5.	1963	Committee of Ministers on Augmentation of Financial Resources of Urban Local Bodies	Rafiq Zakaria
6.	1965–68	Committee on Service Conditions of Municipal Employees	—
7.	1974	Committee on Budgetary Reform in Municipal Administration	Girijapati Mukharji
8.	1982	Study Group on Constitution, Powers and Laws of Urban Local Bodies and Municipal Corporations	K.N. Sahaya
9.	1985–88	National Commission on Urbanisation	C.M. Correa

Source: Laxmikanth

Q.6) When was the Panchayats (Extension to the Scheduled Areas) Act passed by the Indian Parliament?

- a) 1998
- b) 1996
- c) 1995
- d) 1993

ANS: B

Explanation:

- Panchayats Extension to Scheduled Areas Act (PESA) is a law enacted by the Government of India to cover the “Scheduled areas” which are not covered in the 73rd amendment or Panchayati Raj Act of the Indian Constitution.
- It was enacted on 24 December 1996 to enable Gram Sabhas to self-govern their natural resources.
- Under the PESA Act of 1996, the following provisions have been made for empowering Gram Sabhas:
- The Gram Sabha or the Panchayats at the appropriate level shall be consulted before making the acquisition of land in the Scheduled Areas for development projects and before resettling or rehabilitating persons affected by such projects in the Scheduled Areas.
- However, the actual planning and implementation of the projects in the Scheduled Areas shall be coordinated at the state level.
- Planning and management of minor water bodies in the Scheduled Areas shall be entrusted to Panchayats at the appropriate level.
- The recommendations of the Gram Sabha or the Panchayats at the appropriate level shall be mandatory for granting of prospecting license or mining lease for minor minerals in the Scheduled Areas.

Source: Laxmikanth

Q.7) By which amendment of the Constitution, 'Delhi' has been made National Capital Region?

- a) 75th
- b) 73rd
- c) 70th
- d) 69th

ANS: D

Explanation: 69th Constitutional Amendment Act of 1991:

- 69 Amendment Constitutional Amendment Act of 1991 designated the Union Territory of Delhi as the National Capital Territory of Delhi.
- The 69th Amendment act of the Indian Constitution granted special status to Delhi in 1991. it was declared the National Capital Territory.
- It created a state assembly and council of ministers for the state.
- Aditya Nath Jha became the first Lieutenant Governor of Delhi under the act.
- Article 239AA of the Constitution gave the status of Union Territory to Delhi.

Source: Laxmikanth

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Q.8) Consider the following Committees on Panchayati Raj and arrange these in chronological order:

1. Ashok Mehta Committee
2. L. M. Singhvi Committee
3. B. R. Mehta Committee

Select the correct answer from the codes given below.

- a) 1, 2, 3
- b) 3, 1, 2
- c) 2, 1, 3
- d) 3, 2, 1

ANS: B

Explanation: The chronological order is-

- Balwant Rai Mehta Committee - 1957
- Ashok Mehta Committee -1977
- G V K Rao Committee -1985
- L M Singhvi Committee -1986

Balwant Rai Mehta Committee (1957):

- The committee submitted its report in November 1957, in which the term 'democratic decentralization' first appears. The important recommendations are:
- Transfer of resources and power to these bodies to be ensured.
- District Collector to be the chairman of Zila Parishad.
- Establishment of a three-tier Panchayati Raj system – gram panchayat at village level (direct election), Panchayat Samiti at the block level, and Zila Parishad at the district level (indirect election).
- Rajasthan (1959) adopted the system first, followed by Andhra Pradesh in the same year.

Ashok Mehta Committee (1977): The committee was constituted by the Janata government of the time to study Panchayati Raj institutions. The important recommendations are:

- Constitutional recognition to be given to Panchayati Raj institutions.
- A minister for Panchayati Raj to be appointed by the state council of ministers.
- Zila Parishad is to be made responsible for planning at the state level.
- Compulsory powers of taxation to be given to these institutions.
- Political parties should participate at all levels in the elections.
- A three-tier system is to be replaced by a two-tier system.

G V K Rao Committee (1985): The important recommendations of the G V K Rao Committee are:

- Regular elections to be held. Post of DDC (District Development Commissioner) to be created acting as the chief executive officer of the Zila Parishad.
- Zila Parishad is to be given prime importance and all developmental programs at that level are to be handed to it.

L M Singhvi Committee (1986): The committee was constituted by the Rajiv Gandhi government on 'Revitalisation of Panchayati Raj institutions for Democracy and Development. The important recommendations are:

- Nyaya Panchayats to be established for clusters of villages.
- Constitutional recognition for Panchayati Raj institutions.

Source: Laxmikanth

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Q.9) With respect to Panchayat system, which of the following statements is correct?

- a) The Panchayat system exists in all states of India except Nagaland, Meghalaya and Mizoram.
- b) The Panchayat system is introduced in India by the Constitution 74th Amendment Act, and envisages a three tier system of Local Governance
- c) Panchayat system is not provided for states having less than 2 million population
- d) Gram Panchayat can continue for 3 years from the date of election

ANS: A

Explanation: 73rd Amendment Act, 1992:

- This Act added a Part-IX-'The Panchayats' to the constitution of India.
- It consists of provisions from Articles 243 to 243 O.
- The Act also added a new 11th Schedule to the Constitution.
- This schedule contains 29 functional items of the Panchayats and deals with Article 243-G.
- The act provides for a 3-tier system of Panchayati Raj in every state- At the village, intermediate and district levels. So, statement 2 is NOT correct.
- A state having a population not exceeding 2 million may not constitute panchayats at the intermediary level. So, statement 3 is NOT correct.
- The Act provides for a 5-year term of office to the Panchayat at every level. However, it can be dissolved before the completion of its term. So, statement 4 is NOT correct.
- Currently, the Panchayat system exists in all states except Nagaland, Meghalaya, and Mizoram, and in all Union Territories except Delhi.

Source: Laxmikanth

Q.10) How many elected and Ex - Officio members are there in District Planning Committee?

- a) 20 and 5
- b) 20 and 3
- c) 20 and 2
- d) 20 and 10

ANS: B

Explanation: District planning committee

- "District planning committee" is a constitutional body mentioned in article 243 ZD.
- The committee is composed of elected members of local bodies of urban or rural areas and the nominated members within the district.
- The DPCs are to have at least four-fifths elected members as per Article 243 ZD.
- Members should be elected from the elected members of the Panchayat at the district level and of the Municipalities in the district in proportion to the ratio between the population of the rural areas and of the urban areas in the district.
- The function of the committee includes referring to the matters of common interest between the panchayat and the municipalities, preparation of draft with respect to the sharing of water and other natural resources, and integrated development of infrastructure and environmental conservation.
- The committee in each district should consolidate the plans prepared by the Panchayats and Municipalities.
- All the states and union territories except Meghalaya, Mizoram, Nagaland, J&K, and NCT of Delhi are required to set up a "District planning committee".
- Elected and Ex-Officer members in District Planning Committee are 20 and 3 respectively.

Source: Laxmikanth

Geography

Q.1) Which of the following statements is/are correct regarding Tata Iron and Steel Company (TISCO)?

1. Tata Iron and Steel Co. is the first and oldest Iron and Steel Plant in the country.
2. It is located in Jamshedpur (Jharkhand), on the Mahanadi River.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: TISCO

- Tata Iron And Steel Co. Is the first and the oldest in Iron and Steel Plant in country.
- It is located in Jamshedpur (Jharkhand), on the Subarnarekha river.
- Raw Materials
 - Iron-ore:Singhbhum (Noamandi mines- Jharkhand), Mayurbhanj (Gurumahisani mines-Orissa)
 - Coal: Jharia (Jharkhand)
 - Limestone: Singhbhum (Jharkhand)
 - Manganese: Noamundi
 - Water: River of Subarnarekha

Source: NCERT Class 12

Q.2) Which of the following is/are correct factors leading to gradual shifting of sugar industry from North India to Peninsular India?

1. Peninsular tropical climate results in higher yield per unit hectare of land.
2. Greater sucrose quantity in sugar crops in the peninsular region.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Sugar Industry

- Sugar production is moving from north to peninsular regions owing to reasons:
- Tropical climate in peninsular regions lead to larger quantities of yield per hectare
- Greater sucrose quantity in sugar crops in the peninsular region
- It has longer crushing season in south. While the crushing season in Uttar Pradesh ranges from November to February (4months), in case of peninsular regions, its October to May, or even June (about 8months).

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- Though mills in number are more in Uttar Pradesh, mills in Maharashtra are larger in terms of size and output capacity while mills in southern states are better managed and operated efficiently.

Source: NCERT Class 12

Q.3) Identify the correct sequence in ascending order of the volume of production of various silk varieties in India?

1. Mulberry
2. Eri
3. Tasar
4. Muga

Select the correct answer using the codes given below:

- a) 1-2-3-4
- b) 3-4-2-1
- c) 2-3-1-4
- d) 3-2-4-1

ANS: B

Explanation: Silk Varieties

- Ascending order is: Tasar- Muga- Eri- Mulberry
- The production output of Indian Silk Industry in India is 17,300 tons of silk and country produces 4 types of silk i.e. Mulberry, Muga, Tassar and Eri.
- About 80% of the silk produced in the country is of mulberry silk.
- Eri is grown in Assam and the adjacent north-eastern states, Bihar, West Bengal and Odisha.
- Muga is unique in having a golden sheen and is a prized possession of India. Muga is largely restricted to Assam and other north-eastern states and recently spread to West Bengal.

Source: NCERT Class 12

Q.4) Which of the following statements is/are correct regarding cement industries in India?

1. Limestone is the major raw material used in production of cement.
2. The production of cement releases greenhouse gas emissions both directly and indirectly.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Cement Industries in India

- India is the second largest manufacturer of cement in the world. Andhra Pradesh, Rajasthan, Karnataka, Madhya Pradesh, Gujarat and Kerala are largest cement producing states in India.
- Maharashtra is largest consumer state of Cement.
- Limestone is the major raw material used in production of cement.

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- The production of cement releases greenhouse gas emissions both directly and indirectly: the heating of limestone releases CO₂ directly, while the burning of fossil fuels to heat the kiln indirectly results in CO₂ emissions.
- Cement plants account for 5 percent of global emissions of carbon dioxide, the main cause of global warming. Cement has no viable recycling potential.

Source: NCERT Class 12

Q.5) Consider the following statements regarding Bio-CNG:

1. BIO-CNG is the purified form of biogas and comprises more than 93 per cent of pure methane gas.
2. In its composition and energy potential it is different from the commercially available natural gas.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Bio-CNG

- BIO-CNG is the purified form of biogas from which all the unwanted gases are removed to get more than 93 per cent of pure methane gas.
- Once Bio-CNG fuel is commercially produced and readily available, it has the potential to decrease the import of diesel by up to 50 per cent.
- In its composition and energy potential it is exactly similar to the commercially available natural gas.
- India's first BIO-CNG fuel plant was inaugurated in Pune, Maharashtra.
- Benefits of BIO-CNG:
 - It will help in reducing the import of diesel up to 50 per cent
 - It is cost-effective
 - It is pollution free
- Bio CNG can directly replace every utility of LPG and CNG in India. It has the potential to be the future of renewable fuel because of the abundance of biomass in India.

Source: NCERT Class 12

Q.6) Consider the following statements regarding the Transport Sector in India:

1. The transport sector accounts for nearly 18 per cent of the total energy consumed in India, second only to the industrial sector.
2. Road transport accounts for 69 per cent of world's total oil consumption.
3. Of the total CO₂ emissions globally, transportation accounts for almost 23 per cent.

Which of the above given statements is/are correct?

- a) 1 and 3 only
- b) 2 and 3 only
- c) Only 3
- d) 1, 2 and 3

ANS: D

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Explanation: Transport Sector

- The transport sector accounts for nearly 18 per cent of the total energy consumed in India; second only to the industrial sector.
- Nearly 98 per cent of the energy needs of transportation are met through petroleum products, and almost half of the total consumption of petroleum products in India occurs on account of transport activities.
- Transportation accounts for almost 23 per cent of world's total carbon dioxide emissions from fossil fuel combustion.
- Road transport accounts for 69 per cent of world's total oil consumption.

Source: NCERT Class 12

Q.7) Consider the following statements about Inland Waterways in India:

1. The Inland Waterways Authority of India (IWAI) is tasked with development and regulation of inland waterways for shipping and navigation.
2. Inland waterway is environment friendly and fuel efficient mode of transport.
3. Making laws on shipping and navigation on inland waterways comes under State List.

Which of the above given statements is/are not correct?

- a) 1 only
- b) 1 and 2 only
- c) 3 Only
- d) 1, 2 and 3

ANS: C

Explanation: Inland Waterways in India

- IWAI is the statutory nodal agency for development and regulation of inland waterways in the country.
- Making laws on shipping and navigation on inland waterways comes under Union List.
- The Inland Waterways Authority of India (IWAI) came into existence on 27th October 1986 for development and regulation of inland waterways for shipping and navigation.
- Its operations are currently restricted to a few stretches in the Ganga-Bhagirathi-Hooghly rivers, the Brahmaputra, the Barak River, the rivers in Goa, the backwaters in Kerala, inland waters in Mumbai and the deltaic regions of the Godavari & Krishna Rivers.
- The cost of inland waterways transportation is stated to be cheaper than both road transport and railways.

Source: NCERT Class 12

Q.8) Which of the following statements is/are correct regarding the ocean transport routes of the world?

1. The North Atlantic Ocean Route is the busiest of all ocean routes.
2. The Suez Canal oceanic route has the highest volume traffic.
3. The Panama Canal ocean route is called 'the gateway to the Pacific'.

Select the correct answer using the codes given below:

- a) 1 and 3
- b) 2 and 3

- c) 3 only
- d) 1, 2 and 3

ANS: A

Explanation: Ocean Transport Routes

- The North Atlantic Ocean Route has the greatest traffic of all ocean routes. Nearly one-fourth of the tonnage of the world's merchant vessels serves this route. This oceanic route is the busiest trade route of the world.
- The Suez Canal ocean route is second to the North Atlantic in respect of volume of traffic.
- The Panama Canal is 'the gateway to the Pacific' and eliminated the long and hazardous voyage round the Cape Horn. It has benefited on both Atlantic and Pacific seaboard.

Source: NCERT Class 12

Q.9) Consider the following regarding Indian Railways:

1. Highest numbers of fatalities over Indian Railways occur due to accidents at unmanned level crossings.
2. IT enabled Integrated Coaching Management System (ICMS) has been launched recently which helps in offline monitoring of running of trains.
3. Indian Railways has tied up with Sulabh International to develop Bio-toilet tanks for trains.

Which of the above given statements is/are incorrect?

- a) 1 only
- b) 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation: Indian Railways

- Highest numbers of fatalities over IR occur due to accidents at unmanned level crossings.
- These can be minimized with the construction of road over bridges and road under bridges.
- IT enabled Integrated Coaching Management System (ICMS) has been launched which helps in online monitoring of running of trains.
- Indian Railways (IR) and DRDO together have developed Bio-toilet tanks.

Source: NCERT Class 12

Q.10) Consider the following statements about Mica:

1. It is produced from metallic minerals.
2. India has a near monopoly in the production of mica globally.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Mineral Mica

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- Mica is a naturally occurring non-metallic mineral that is based on a collection of silicates. It can withstand high voltage and has low power loss factor.
- It is used in toothpaste and cosmetics because of its glittery appearance. It also acts as a mild abrasive in toothpaste.
- India is one of the foremost suppliers of mica to the world. Mica-bearing igneous rocks occur in AP, Bihar, Jharkhand, Maharashtra, and Rajasthan.
- India has a near monopoly in the production of mica [60 % of world's total]. Production decreased in recent times due to fall in demand in the international market. Fall in demand is due to better synthetic alternatives that are available.

Source: NCERT Class 12

Environment

Q.1) A legal binding obligation for the implementation of the Prior Informed Consent (PIC) procedure in the context of hazardous chemicals has been created by which of the following conventions?

- a) Rotterdam Convention
- b) Basel Convention
- c) Minamata Convention
- d) Stockholm Convention

ANS: A

Explanation: Prior Informed Consent:

- The Rotterdam Convention was adopted in 1998 and entered into force in 2004.
- The objective of the Rotterdam Convention was to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals to protect human health and the environment from potential harm.
- The Convention creates legal binding obligations for the implementation of the Prior Informed Consent (PIC) procedure.

Source: <http://www.pic.int/>

Q.2) Consider the following statements with reference to the impacts of livestock on environment:

1. The meat industries do not emit large amounts of carbon dioxide and methane.
2. Animal waste contains excess phosphorous which is harmful to the environment.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2

d) Neither 1 nor 2

ANS: C

Explanation: Livestock Sector

- The livestock sector is a major environmental polluter.
- Feed production requires intensive use of water, fertilizer, pesticides and fossil fuels. Because only a third of the nutrients fed to animals are absorbed, animal waste is a leading factor in the pollution of land and water resources.
- The beef, pork and poultry industries also emit large amounts of carbon dioxide, methane and other greenhouse gases.

Source: <https://www.fao.org/livestock-environment/en>

Q.3) Consider the following ways in which increased level of carbon dioxide in the atmosphere would impact the plants:

1. A decrease in photosynthetic productivity of plants.
2. Proliferation of weeds.
3. Increase in number of insects and other pests.

Which of the above statements is/are correct?

- a) 1 and 3 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation: Increased CO₂ concentration in the atmosphere leads to:

- Increase photosynthetic productivity of plants. This in turn produces more organic matter.
- Weeds may proliferate rapidly and that too at the expense of useful plants.
- Insects and other pests that feed on plants may also increase in number.
- Survival of other organisms gets affected.

Source: ForumIAS

Q.4) Which of the following statements is/are correct regarding Trade Related Analysis of Fauna and Flora in Commerce (TRAFFIC)?

1. TRAFFIC is a joint programme of WWF and UNEP.
2. It aims to reduce wildlife crime and illegal trade.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: TRAFFIC

- TRAFFIC is a wildlife trade monitoring network which is a joint program of WWF and IUCN.
- TRAFFIC's work is organized around two work streams:

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- Action to reduce wildlife crime and illegal trade.
- Action to enhance benefits from sustainable, legal wildlife trade.
- TRAFFIC undertakes its activities in close collaboration with governments and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Source: <https://www.traffic.org/>

Q.5) Consider the following statements regarding the Black Carbon Research Initiative:

1. It is an Indian initiative launched as a part of the National Carbonaceous Aerosols Program (NCAP).
2. Ministry of Earth Sciences, DRDO and Ministry of Environment are implementing agencies of this programme.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation:

- ISRO-GBP (Indian Space Research Organization's Geosphere Biosphere Programme) recognized the importance of Black Carbon aerosols on the climate system and it was decided to pursue studies of Black Carbon in subsequent years.
- In view of this, a multi-institutional and multi-agency Science Plan has been launched in Ministry of Environment in association with Ministry of Earth Sciences, Indian Space Research Organization, Ministry of Science and Technology and other associated agencies, to monitor aerosols and assess its impacts through various modeling techniques.

Source:

<http://indiaenvironmentportal.org.in/files/Black%20Carbon%20Research%20Initiative.pdf>

Q.6) Consider the following statements:

1. The Montreal Protocol is an international environmental treaty to phase out the Ozone Depleting Substances (ODS).
2. Kigali agreement is an amendment to Montreal Protocol.
3. India has not ratified the Kigali Agreement.

Which of the above given statements is/are correct?

- a) 2 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1 only

ANS: B

Explanation:

- The Montreal Protocol is a most effective international environmental treaty to phase out the Ozone Depleting Substances (ODSs) from the atmosphere. It came into force in 1989. It has 197 member parties to the protocol and become a first international treaty with complete ratification.
- It has successfully curbed the 98% production of chlorofluorocarbons and other ODSs and significantly contributed to the repair of the ozone hole.
- Kigali Agreement: It has undergone several amendments and Kigali amendment is the eighth amendment to this protocol. In the 28th meeting of the Parties to the Montreal Protocol, negotiators from 197 nations have signed a historic agreement to amend the Montreal Protocol in Kigali, a capital city of a tiny African country, Rwanda on 15th October 2016.
- As per the agreement, these countries are expected to reduce the manufacture and use of Hydrofluorocarbons (HFCs) by roughly 80-85% from their respective baselines, till 2045.
- This phase down is expected to arrest the global average temperature rise up to 0.5 degree Celsius by 2100.
- India joins the nations of the world in lauding the Hydrofluorocarbon (HFC) Amendment to the Montreal Protocol, agreed to at the 28th Meeting of Parties at Kigali, Rwanda. The Kigali Amendment to the Montreal Protocol is legally binding and will come into force from January 1, 2019.
- The Kigali Agreement upholds the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR & RC).

Source: ForumIAS

Q.7) National Green Tribunal (NGT) adjudicates matters relating to:

1. Forest Conservation Act.
2. Public Liability Insurance Act, 1991.
3. Wild Life (Protection) Act, 1972.
4. Biological Diversity Act, 2002.

Select the correct answer using the codes given below:

- a) 1, 2 and 3
- b) 1, 2 and 4
- c) 1, 3 and 4
- d) All

ANS: B

Explanation: National Green Tribunal:

- The NGT was established in 2010 under the National Green Tribunal Act, 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
- It adjudicates matters relating to:
 - Water (Prevention and Control of Pollution) Act, 1974;
 - Air (Prevention and Control of Pollution) Act, 1981;
 - Environment (Protection) Act, 1986;
 - Public Liability Insurance Act, 1991;

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- o Forest Conservation Act and Biological Diversity Act; 2002.

Source:

<https://www.greentribunal.gov.in/faqs#:~:text=The%20Tribunal%20has%20jurisdiction%20over,before%20the%20National%20Green%20Tribunal.>

Q.8) Solar Radiation Management is used as a geo-engineering technique to combat climate change. Which of the following are its components?

1. Placing Aluminum mirrors in space.
2. White painting roofs and roads.
3. Firing sulphur dioxide into atmosphere.
4. Ocean fertilization.

Select the correct answer using the codes given below:

- a) 2 and 3 only
- b) 3 and 4 only
- c) 1, 2 and 3 only
- d) 1, 2 and 4 only

ANS: C

Explanation:

- Theoretically, there are two major types of interventions - Carbon Sequestration and solar radiation management.
- Solar Radiation Management techniques include firing sulphur dioxide into atmosphere, putting huge mirrors in the space, creating pale colored rooftop and other structures which have high albedo.
- Ocean fertilization is adding iron or nitrogen to the ocean to promote carbon sequestration by phyto planktons.
- Geo engineering is large-scale intervention in the Earth's climatic system with the aim of limiting climate change.

Source:

[https://royalsocietypublishing.org/doi/10.1098/rspa.2019.0255#:~:text='Solar%20geoengineering'%20\(sometimes%20called,gases%20%5B5%2C6%5D.](https://royalsocietypublishing.org/doi/10.1098/rspa.2019.0255#:~:text='Solar%20geoengineering'%20(sometimes%20called,gases%20%5B5%2C6%5D.)

Q.9) Animal Board of India was constituted under which of the following Acts?

- a) Biological Diversity Act, 2002.
- b) Wild Life Protection Act, 1972.
- c) Prevention of Cruelty to Animal Act (PCA), 1960.
- d) Forest Conservation Act, 1980.

ANS: C

Explanation: Animal Board of India:

- The Prevention of Cruelty to Animals Act is an Act of the Parliament of India enacted in 1960 to prevent the infliction of unnecessary pain or suffering on animals and to amend

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the laws relating to the prevention of cruelty to animals. As per the provisions of the law the government of India formed the Animal Welfare Board of India.

- The act makes a provision under heading "Saving as respects manner of killing prescribed by religion" Nothing contained in this Act shall render it an offence to kill any animal in a manner required by the religion of any community.

Source: <http://www.awbi.in/about.html>

Q.10) The term 'Extended Producer Responsibility' is most often used in the context of:

- a) Intellectual Property Rights.
- b) Collection and channelization of e-waste.
- c) Tribal rights in terms of minor forest produce.
- d) Obligation of mining companies to safeguard the welfare of its workers.

ANS: B

Explanation:

- 'Extended Producer Responsibility' is a concept under which producers will be responsible for collection and channelization of e-waste generated from the 'end of life' of their products to registered dismantler or recycler.
- It is defined under e-waste (Management and Handling) Rules, 2016 as notified by the Ministry of Environment & Forests.

Source: <https://www.oecd.org/environment/extended-producer-responsibility.htm>

History

Q.1) Which one of the following observations is not true about the Quit India Movement of 1942?

- a) It was a non-violent movement

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- b) Mahatma Gandhi condemn the violence of the masses
- c) It was a spontaneous movement
- d) It did not attract the labour class in general

ANS: B

Explanation: Quit India Movement of 1942

- 'Do or Die' mantra: Gandhi's famous mantra "We shall either free India or die in the attempt; we shall not live to see the perpetuation of our slavery" led to an arrest of all the top leaders of the Congress in the early hours of August 9, 1942, and being taken to unknown destinations.
- A spontaneous outburst of mass anger: the arrest of leaders led to mass upsurge all over the country for six or seven weeks after the unexpected event of August 9, 1942.
- Methods used: people devised a variety of ways of expressing their anger. In some places, huge crowds attacked police stations, post offices, courts, railway stations and other symbols of a government authority.
- National flags were forcibly hoisted on public buildings in defiance of the police. Cities, towns and villages witnessed the people's wrath.
- The greatest level of violence occurred in Bihar and Eastern United Province (now Uttar Pradesh).

Parallel governments were established at many places:

- Ballia (in August 1942 for a week) under Chittu Pandey.
- Tamluk (Midnapore, from December 1942 to September 1944) Jatiya Sarkar undertook cyclone relief work, sanctioned grants to schools, supplied paddy from the rich to the poor, organised Vidyut Vahinis, etc.
- Satara (mid-1943 to 1945), "Prati Sarkar", was organised under leaders like Y.B. Chavan, Nana Patil, etc.

Mahatma Gandhi refused to condemn the violence of the masses and held the government responsible for this violence.

The Quit India movement failed because of heavy-handed suppression by Government, weak coordination, lack of leadership and a clear-cut programme of action.

The Quit India movement was the spontaneous participation of the masses compared to the other Gandhian movements like non-cooperation and civil disobedience.

The great significance of this historic movement was that it placed the demand for independence on the immediate agenda of the national movement.

After 'Quit India' there could be no retreat. Independence was no longer a matter of bargain. And this became amply clear after World War-II.

Source: CSP 2011

Q.2) Quit India Movement was launched in response to:

- a) Cabinet Mission Plan
- b) Cripps Proposals
- c) Simon Commission Report
- d) Wavell Plan

ANS: B

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Explanation: British government sent a delegation to India under Sir Stafford Cripps to negotiate with the INC, a deal to obtain total cooperation during the war.

- In return of progressive devolution and distribution of power from the crown and the Viceroy to an elected Indian legislature.
- The talks failed, as they did not address the key demand of self-government and only making an offer of limited dominion status which was unacceptable to the Indian movement

Source: CSP 2013

Q.3) With reference to Indian freedom struggle, Usha Mehta is well-known for:

- a) Running the secret Congress Radio in the wake of Quit India Movement
- b) Participating in the Second Round Table Conference
- c) Leading a contingent of Indian National Army
- d) Assisting in the formation of Interim Government under Pandit Jawaharlal Nehru

ANS: A

Explanation: Aruna Asaf Alipopularly known as the 'Grand Old Lady' of the Independence Movement is known for hoisting the Indian flag at the Gowalia Tank Maidan in Mumbai during the Quit India Movement.

Female leaders like Usha Mehta has helped set up an underground radio station which led to the awakening about the movement.

Source: CSP 2011

Q.4) Which of the following parties were established by Dr. B. R. Ambedkar?

1. The Peasants and Workers Party of India
2. All India Scheduled Castes Federation
3. The Independent Labour Party

Select the correct answer using the codes given below :

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation: Facts about Dr. B. R Ambedkar

- Bahishkrit Hitakarini Sabha was the first organization formed by Dr. Ambedkar in 1924.
- The First Round Table Conference was convened in London on November 12, 1930. The depressed classes were represented by Dr. B.R. Ambedkar and Rao Bahadur Srinivasan.
- Ambedkar formed the Independent Labour Party (ILP) in August, 1936, which participated in the provincial elections of Bombay and won 13 seats out of 15 seats reserved for scheduled castes. Independent Labour Party was transformed by Ambedkar as the All India Scheduled Castes Federation in 1942. It was a political party which participated in the general elections of 1946 but was completely defeated.
- Ambedkar was opposed to the strike by civil servants. For him strike is nothing more than a breach of contract of service. It is only a civil wrong not a crime.
- In July 1942, Ambedkar was appointed the member of Executive Council of Viceroy as a Labour member. He resigned from this post in May 1946.

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- In January, 1920, Ambedkar had also started a weekly paper called 'Mooknayak' (Leader of the Dumb) to champion the cause of the depressed classes in India.
- Some of his famous books include- The Untouchable: Who are They and Why They Have Become Untouchables; Buddha and His Dhamma; 'The Rise and Fall of Hindu Women', 'Emancipation of Untouchables', 'The Evolution of Provincial Finance in British India'; 'Pakistan or Partition of India', 'Thoughts on Linguistic States', etc.
- Ambedkar was appointed as the first Law Minister of Independent India, but he resigned from the Cabinet on September 1951 due to differences with Nehru on the Hindu Code Bill.

Source: CSP 2012

Q.5) Mahatma Gandhi undertook fast unto death in 1932, mainly because:

- a) Round Table Conference failed to satisfy Indian political aspirations
- b) Congress and Muslim League had differences of opinion
- c) Ramsay Macdonald announced the Communal Award
- d) None of the statements (a), (b) and (c) given above is correct in this context

ANS: C

Explanation: On 16th September 1932, Mahatma Gandhi began 'fast up to death' to protest British support of a new Indian constitution which favoured separate the Indian electorate by caste. This separate electorate was given through the Macdonald award when the second round table conference ended inconclusively.

Source: CSP 2012

Q.6) The Ilbert Bill controversy was related to the:

- a) Imposition restrictions the Indians of certain to carry arms by Indians
- b) Imposition of restrictions on newspapers and magazines published in Indian languages
- c) Removal of disqualifications imposed on the Indian magistrates with regard to the trial of the Europeans
- d) Removal of a duty on imported cotton cloth

ANS: C

Explanation: Ilbert Bill, in the history of India, a controversial measure proposed in 1883 that sought to allow senior Indian magistrates to preside over cases involving British subjects in India. The bill, severely weakened by compromise, was enacted by the Indian Legislative Council on Jan. 25, 1884.

Source: CSP 2013

Q.7) The Rowlatt Act aimed at:

- a) Compulsory economic support to war efforts
- b) Imprisonment without trial and summary procedures for trial
- c) Suppression of the Khilafat Movement
- d) Imposition of restrictions on freedom of the press

ANS: B

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Explanation: The main aim of the Rowlatt act was to curb the fundamental rights of Indian citizens. Rowlatt Act was passed with the objective of completely suppressing the political activities in India by giving enormous powers to the Government.

Source: CSP 2012

Q.8) During Indian freedom struggle, the National Social Conference was formed. What was the reason for its formation?

- a) Different social reform groups or organizations of Bengal region united to form a single body to discuss the issues of larger interest and to prepare appropriate petitions/representations to the government.
- b) Indian National Congress did not want to include social reforms in its deliberations and decided to form a separate body for such a purpose
- c) Behramji Malabari and M. G. Ranade decided to bring together all the social reform groups of the country under one organization
- d) None of the statements (a), (b) and (c) given above is correct in this context

ANS: B

Explanation: Indian National Congress did not want to include social reforms in its deliberations and decided to form a separate body for such a purpose. National Social Conference was founded by M.G. Ranade and Raghunath Rao. It was virtually the social reform cell of the Indian National Congress.

- The Conference met annually as a subsidiary convention of the Indian National Congress, at the same venue, and focused attention on social reform.
- The Conference advocated inter-caste marriages and opposed kulinism and polygamy.

Source: CSP 2012

Q.9) The Partition of Bengal made by Lord Curzon in 1905 lasted until

- a) The First World War when Indian troops were needed by the British and the partition was ended.
- b) King George V abrogated Curzon's Act at the Royal Darbar in Delhi in 1911
- c) Gandhiji launched his Civil Disobedience Movement
- d) The Partition of India, in 1947 when East Bengal became East Pakistan

ANS: B

Explanation: The Partition of Bengal made by Lord Curzon in 1905 lasted until the First World War when Indian troops were needed by the British and the partition was ended. King George V abrogated Curzon's Act at the Royal Durbar in Delhi in 1911.

Source: CSP 2014

Q.10) The Ghadr (Ghadar) was a

- a) Revolutionary association of Indians with headquarters at San Francisco.
- b) Nationalist organization operating from Singapore
- c) Militant organization with headquarters at Berlin
- d) Communist movement for India's freedom with head-quarters at Tashkent

ANS: A

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Explanation: The Ghadar Party was a revolutionary association founded by Punjabi Indians in the United States and Canada with the aim to gaining India's independence from British rule. Key members included Lala Har Dayal, Sohan Singh Bhakna, Kartar Singh Sarabha and Rashbehari Bose. It had its headquarters at San Francisco.

Source: CSP 2014

Schemes/ Programmes/ Institutions

Q.1) Consider the following statements with respect to National Mission on Clean Ganga (NMCG):

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1. It is registered as society under the Societies Registration Act 1860
2. It acted as implementation arm of National Ganga River Basin Authority (NGRBA)

Which of the following below given codes are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: National Mission for Clean Ganga(NMCG) was registered as a society on 12th August 2011 under the Societies Registration Act 1860.It acted as implementation arm of National Ganga River Basin Authority(NGRBA) which was constituted under the provisions of the Environment (Protection) Act (EPA),1986. NGRBA has since been dissolved with effect from the 7th October 2016, consequent to constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council) vide notification no. S.O. 3187(E) dt.7th October 2016 under EPA 1986.

Source: ForumIAS

Q.2) Which of the following institution releases the State of Global Air report?

- a) World Economic Forum
- b) World Health Organization
- c) Health Effects Institute
- d) UNICEF

ANS: C

Explanation: The State of Global Air report brings into one place the latest information on air quality and health for countries around the globe. It is produced annually by the Health Effects Institute and the Institute for Health Metrics and Evaluation's Global Burden of Disease project as an objective, peer-reviewed source of air quality and health impact patterns and trends for countries around the world.

Source: <https://www.stateofglobalair.org/about>

Q.3) Consider the following statements with respect to Jal Jeevan Mission:

1. Objective of the mission is to give functional tap-water to every household in the country by 2024
2. Mission is based up on the principle of source sustainability
3. Jal Jeevan Mission will converge with other Central and State Government Schemes to achieve its objectives of sustainable water supply

Which of the following below given codes are correct?

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- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: Water is a global issue. Our country is facing challenges regarding drinking water and making water available for irrigation. Availability of water or precipitation is favourable to us, but the problem lies with managing that water. Prime Minister Narendra Modi realised this, and therefore this Ministry was formed. The impact of climate change is visible all over the world, and in India also. The big programme announced by the Prime Minister — Jal Jeevan Mission — is to give functional tap-water to every household in the country by 2024. The Jal Jeevan Mission is set to be based on various water conservation efforts like point recharge, desilting of minor irrigation tanks, use of greywater for agriculture and source sustainability. The Jal Jeevan Mission will converge with other Central and State Government Schemes to achieve its objectives of sustainable water supply management across the country.

Source: <https://jaljeevanmission.gov.in/>

Q.4) Consider the following statements with respect to Information Fusion Centre (IFC) - Indian Ocean Region (IOR):

1. IFC is based at the Indian Navy's Information Management and Analysis Centre (IMAC) at Noida
2. The IFC for Indian Ocean Region has the primary objective of jointly monitoring the vast Indian Ocean Region
3. IFC-IOR will work closely with countries in the region on white shipping

Which of the following below given codes are correct?

- a) 1 only
- b) 1 and 2 only
- c) 1, 2 and 3
- d) 2 and 3 only

ANS: D

Explanation: IFC is based at the Indian Navy's Information Management and Analysis Centre (IMAC) at Gurugram in the National Capital Region. IMAC is the single point centre on Indian Navy, linking all the coastal radar chains to generate a seamless real-time picture of the nearly 7,500km coastline.

- The IFC for Indian Ocean Region has the primary objective of jointly monitoring the vast Indian Ocean Region.
- To strengthen maritime security in the Indian Ocean Region (IOR)
- Indian Navy has launched its Information Fusion Centre (IFC) that will share information on vessels of interest with other friendly nations.
- IFC will function as a platform where multiple friendly nations can freely exchange non-sensitive information from maritime domain.
- The IFC – IOR shall be a collaborative construct that will work with partners, countries as well as international agencies; to enhance maritime security and safety
- It would also aim to work closely with the multi-national constructs and other information fusion centres.

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- IFC-IOR will work closely with countries in the region on white shipping and will be operated by the Indian Navy.
- The IFC-IOR would work towards capability building in the region, coordination of incident response and disaster relief, and in time, also share submarine safety information

Source: <https://www.indiannavy.nic.in/ifc-ior/about-us.html#:~:text=The%20Information%20Fusion%20Centre%20%E2%80%93%20Indian,to%20world%20trade%20and%20security>

Q.5) Consider the following statements with respect to National Horticulture Board (NHB):

1. It is established on the recommendations of first National Farmers Commission
2. The NHB is registered as a Society under the Societies Registration Act 1860, with its headquarters at Gurugram
3. The main objectives of the NHB are to improve integrated development of Horticulture industry in India

Which of the following below given codes are correct?

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation: National Horticulture Board (NHB) was set up by Government of India in April 1984 on the basis of recommendations of the "Group on Perishable Agricultural Commodities", headed by Dr M. S. Swaminathan, the then Member (Agriculture), Planning Commission, Government of India. The NHB is registered as a Society under the Societies Registration Act 1860, with its headquarters at Gurugram. The main objectives of the NHB are to improve integrated development of Horticulture industry and to help in coordinating, sustaining the production and processing of fruits and vegetables.

Source: <http://nhb.gov.in/>

Q.6) Sendai Framework is related to which of the following:

- a) To protect human health and the environment from the adverse effects of mercury.
- b) Disaster Risk Reduction 2015-2030
- c) Conservation of species within their natural habitats
- d) Global women's safety framework

ANS: B

Explanation: The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility

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should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims for the following outcome:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNISDR upon the request of the UN General Assembly.

International Day for Disaster Risk Reduction began in 1989, after a call by the United Nations General Assembly for a day to promote a global culture of risk-awareness and disaster reduction. Held every 13 October, the day celebrates how people and communities around the world are reducing their exposure to disasters and raising awareness about the importance of reining in the risks that they face. The 2019 edition continues as part of the "Sendai Seven" campaign, centred on the seven targets of the Sendai Framework.

Source: <https://www.undrr.org/implementing-sendai-framework/what-sendai-framework>

Q.7) India Ratings and Research (Ind-Ra) is part of which of the following credit rating agency?

- a) Moody
- b) CRISIL
- c) S and P global
- d) Fitch group

ANS: D

Explanation: India Ratings and Research (Ind-Ra) is India's most respected credit rating agency committed to providing India's credit markets accurate, timely and prospective credit opinions. Built on a foundation of independent thinking, rigorous analytics, and an open and balanced approach towards credit research, Ind-Ra has grown rapidly during the past decade, gaining significant market presence in India's fixed income market.

Ind-Ra currently maintains coverage of corporate issuers, financial institutions (including banks and insurance companies), finance and leasing companies, managed funds, urban local bodies, and structured finance and project finance companies.

Headquartered in Mumbai, Ind-Ra has seven branch offices located in Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata and Pune. Ind-Ra is recognised by the Securities and Exchange Board of India, the Reserve Bank of India and National Housing Bank.

Ind-Ra is a 100% owned subsidiary of the Fitch Group.

Source: <https://www.indiaratings.co.in/about-us>

Q.8) "Special & Differential Treatment" provisions related to which of the following multilateral Institution?

- a) World Trade Organization
- b) IMF
- c) World Bank
- d) UNCTAD

ANS: A

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Explanation: India along with several others countries, including China and African nations, has cautioned against diluting special and differential treatment provisions related to developing countries, saying it would lead to "intractable deadlock" at the WTO. A communication by west African country Benin, on behalf of the African Group, Bolivia, China, Cuba, India and Oman has said that developing countries' should continue to enjoy benefits of special and differential treatment (S&D) under WTO rules and they must be allowed to make their own assessments regarding their own developing country status. They have also stated that existing S&D provisions must be upheld and it should be provided in the current and future negotiations in the World Trade Organisation (WTO).

Source:

https://www.wto.org/english/tratop_e/devel_e/dev_special_differential_provisions_e.htm

Q.9) 90:90:90: strategy which remains in news, related to which of the following?

- a) Malaria control
- b) Tuberculosis control
- c) AIDS control
- d) Viral Fever control

ANS: C

Explanation: 90:90:90 Strategy: It is a HIV treatment narrative of UNAIDS programme which has set targets of

- 90% of all people living with HIV will know their HIV status (90% diagnosed),
- 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (90% on HIV treatment) and
- 90% of all people receiving antiretroviral therapy will have viral suppression (90% suppressed)

Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4930545/#:~:text=UNAIDS%20%E2%80%9C90%2D90%2D90,level%20endemic%20disease%20by%202030>

Q.10) Consider the following statements about Tuberculosis (TB):

1. Government of India (GoI) aims to eliminate TB by 2025.
2. TB is caused by protozoa.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: The Mycobacterium tuberculosis bacterium causes TB. It is spread through the air when a person with TB (whose lungs are affected) coughs, sneezes, spits, laughs, or talks. TB is contagious, but it is not easy to catch

Elimination as defined by the World Health Organisation (WHO), means that there should be less than 1 case of TB for a population of a million people. In view of the current TB burden in India, there is a great deal that needs to be done if elimination is to be achieved by 2025. The National Strategic Plan 2017 - 2025, sets out the government plans of how the elimination of TB can be achieved.

the World Health Organization released its annual Global Tuberculosis Report for 2019, which found India was able to reduce incidence in 2018 by almost 50,000 cases from the previous year, but still had the highest burden with 2.69 million cases — 26.9% of the global burden of 10 million.

Source: ForumIAS

Science & Technology - Revision

Q.1) Consider the following statements with respect to Cell for IPR Promotion and Management (CIPAM):

1. A professional body which ensures focused action on issues related to IPRs.

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2. It works under Department of Science & Technology.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: A professional body under the aegis of Department for Promotion of Industry and Internal Trade (DPIIT) which ensures focused action on issues related to IPRs and addresses the 7 identified objectives of the policy.

- CIPAM assists in simplifying and streamlining of IP processes, apart from undertaking steps for furthering IPR awareness, commercialization and enforcement.
- Simplifying and streamlining of IP processes by formulating and implementing a focused strategy for each policy objective
- Coordination with State level agencies and Ministries/ Departments of the Government of India, industry bodies as well as international agencies; IP cells to be set up
- IPR awareness campaign across the country in schools, colleges/universities and the industry
- Training and sensitization programmes for enforcement agencies and Judiciary; coordination for effective enforcement of IPR rights.
- Study and facilitate implementation of best practices for promotion and commercialization of IP within the country

Source: <https://cipam.gov.in/index.php/about/national-ipr-policy/>

Q.2) “Lunar X Prize” sponsored by which of the following social media giant?

- a) Face Book
- b) Google
- c) YouTube
- d) Twitter

ANS: B

Explanation: The Google Lunar XPRIZE (GLXP), sometimes referred to as Moon 2.0, was a 2007–2018 inducement prize space competition organized by the X Prize Foundation, and sponsored by Google. The challenge called for privately funded teams to be the first to land a robotic spacecraft on the Moon, travel 500 meters, and transmit back to Earth high-definition video and images.

Source: <https://www.xprize.org/prizes/google-lunar>

Q.3) The Experimental Advanced Superconducting Tokamak (EAST) nuclear fusion reactor has been developed by which of the following country?

- a) USA
- b) Japan
- c) France
- d) China

ANS: D

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Explanation: Scientists around the world have been trying for decades to recreate the unfathomable power of the sun here on Earth, and a team in China has managed to best our local star. Not for very long, though. The team operating the Experimental Advanced Superconducting Tokamak (EAST) managed to heat the reactor's internal plasma to 100 million degrees Celsius (212 million Fahrenheit). That's six times hotter than the sun, but it doesn't have any net power generation. In stars, hydrogen fuses into helium, and eventually into heavier elements. The fusion process releases large amounts of energy, and the byproducts of fusion aren't radioactive. The only nuclear power we've managed to utilize on Earth is fission, which requires dangerous radioactive materials and comes with the risk of a reactor meltdown.

Source: <https://indianexpress.com/article/explained/explained-what-is-chinas-artificial-sun-experimental-fusion-reactor-that-has-set-a-new-record-7341397/>

Q.4) Consider the following statements with respect to Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA):

1. Scheme has been initiated with the vision to empower at least one person per household with crucial digital literacy skills by 2030
2. Project aims at helping adults with low technological literacy develop the skills they need to interact in an increasingly digital world

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The Scheme has been initiated with the vision to empower at least one person per household with crucial digital literacy skills by 2020. This is expected to touch the lives of more than 250 million individuals over the next few years. PMGDISHA is an effort to complement government's vision to transform one from each household as digitally literate. The project aims at helping adults with low technological literacy develop the skills they need to interact in an increasingly digital world.

Source: <https://www.pmgdisha.in/about-pmgdisha/>

Q.5) Consider the following statements with respect to Gas-Hydrates:

1. Hydrates formed when a gas such as methane gets trapped in well-defined cages of water molecules forming crystalline solids
2. Natural gas hydrates occur on continental margins and shelves worldwide from Polar Regions to the tropics

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only

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- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: They are formed when a gas such as methane gets trapped in well-defined cages of water molecules forming crystalline solids. It is a solid ice-like form of water that contains gas molecules in its molecular cavities. Natural gas hydrates occur on continental margins and shelves worldwide from Polar Regions to the tropics. Gas hydrate reservoirs are generally associated with biologically rich cold seep ecosystems at the seafloor. Cold seeps are locations where hydro-carbon rich fluid seeps up from below the sea floor, often as methane or hydrogen sulfide.

Source: <https://www.energy.gov/fecm/science-innovation/oil-gas-research/methane-hydrate>

Q.6) Consider the following statements with respect to Prime Minister Research Fellows (PMRF):

1. It is a public-private partnership (PPP) between Science & Engineering Research Board (SERB) and FICCI
2. It aims to improve the quality of research by attracting the best talents across the country and reduce brain drain

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Prime Minister Research Fellows (PMRF): It is a public-private partnership (PPP) between Science & Engineering Research Board (SERB) and Confederation of Indian Industry (CII) which aims to improve the quality of research by attracting the best talents across the country and reduce brain drain.

Source: <https://pmmodiyojana.in/>

Q.7) The India-based Neutrino Observatory (INO) is located in which of the following state?

- a) Tamil Nadu
- b) Andhra Pradesh
- c) Karnataka
- d) Kerala

ANS: A

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Explanation: The India-based Neutrino Observatory (INO) is now in the feasibility study stage. More than 50 scientists from about 15 Institutes and Universities in India have come together to form the National Neutrino Collaboration group (NNCG). This group has the task of detailing various aspects related to INO activity and come up with a proposal for an underground neutrino laboratory. An underground neutrino facility in India offers the unique possibility of locating a neutrino detector near the Earth's equator. This can have some very interesting consequences for solar neutrinos which would then pass through the core of the Earth in their passage to the detector from the Sun at night. The INO collaboration has now decided on a site in Bodi West Hills (BWH) region near Pottipuram village in Theni district of Tamilnadu (110KM from the temple town of Madurai).

Source: <https://www.ino.tifr.res.in/ino/aboutINO.php>

Q.8) Consider the following statements with respect to Genetic Engineering Appraisal Committee (GEAC):

1. Committee is responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials
2. It is functions under Ministry of Science and Technology

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: The Genetic Engineering Appraisal Committee (GEAC) functions in the Ministry of Environment, Forest and Climate Change (MoEF&CC). As per Rules, 1989, it is responsible for appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle. The committee is also responsible for appraisal of proposals relating to release of genetically engineered (GE) organisms and products into the environment including experimental field trials.

Source: <https://geacindia.gov.in/about-geac-india.aspx>

Q.9) In which year Mission on Nano Science and Technology (Nano Mission) launched in India?

- a) 2005
- b) 2006
- c) 2007
- d) 2008

ANS: C

Explanation: In 2007 a Mission on Nano Science and Technology (Nano Mission) was launched by the DST to foster, promote and develop all aspects of nanoscience and nanotechnology which have the potential to benefit the country. It is an umbrella programme for capacity building which envisages the overall development of this field of research in the country and to tap some of its applied potential for nation's development.

Source: [https://dst.gov.in/scientific-programmes/mission-nano-science-and-technology-nano-mission#:~:text=Building%20upon%20the%20promotional%20activities,Nano%20Mission\)%20in%20May%202007.](https://dst.gov.in/scientific-programmes/mission-nano-science-and-technology-nano-mission#:~:text=Building%20upon%20the%20promotional%20activities,Nano%20Mission)%20in%20May%202007.)

Q.10) Berne Convention of 1886 related to which of the following?

- a) Primary Health Care
- b) Environmental Protection
- c) Global peace
- d) Intellectual property rights

ANS: D

Explanation: The Berne Convention, adopted in 1886, deals with the protection of works and the rights of their authors. It provides creators such as authors, musicians, poets, painters etc. with the means to control how their works are used, by whom, and on what terms. It is based on three basic principles and contains a series of provisions determining the minimum protection to be granted, as well as special provisions available to developing countries that want to make use of them.

Source: <https://www.wipo.int/treaties/en/ip/berne/>

Indian Economy

Q.1) Which type of economy is most likely to follow a laissez-faire policy?

- a) Socialist economy
- b) Communist economy

- c) Capitalist economy
- d) Mixed Economy

ANS: C

Explanation: In a laissez-faire economy, the only role of the government is to prevent any coercion against individuals. Theft, fraud, and monopolies prevent rational market forces from operating.

Laissez-faire policies need three components to work: capitalism, the free market economy, and rational market theory.

Capitalism is an economic system in which private entities own the factors of production. In the 1987 movie "Wall Street," Michael Douglas as Gordon Gekko summed up the philosophy of laissez-faire capitalism when he famously said, "Greed, for lack of a better word, is good."

Source: <https://www.thebalance.com/laissez-faire-definition-4159781>

Q.2) Which of the following has been recommended to be the part of regulatory architecture of Financial Sector Legislative Reforms Commission?

1. Unified Financial Regulator
2. Unified Capital markets regulator
3. Financial Sector Appellate Tribunal
4. Financial Redressal Agency

Select the correct answer using the codes given below:

- a) 1, 2 and 4
- b) 1, 3 and 4
- c) 1, 2 and 3
- d) All

ANS: B

Explanation:

The model of the proposed regulatory architecture will comprise the following agencies:

- The central bank as the monetary authority, banking regulator and payment system regulator.
- A unified regulator for the rest of the financial sector.
- A deposit insurance-cum-resolution agency.
- A public debt management agency.
- A financial redressal agency.
- A financial sector appellate tribunal.
- A mechanism for coordination, systemic risk, financial development and other issues where the role of multiple agencies are involved (FSDC/similar to FSDC)

Source: <https://prsindia.org/policy/report-summaries/financial-sector-legislative-reforms-commission>

Q.3) Fiscal Consolation in India includes:

1. Elimination of tax exemptions.
2. Cutting out non-essential and unproductive activities.
3. Reduction of time and cost overruns on projects.
4. Tax reforms on direct taxes only.

Which of the above elements are correct?

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- a) 1, 2 and 3
- b) 2, 3 and 4
- c) 2 and 4
- d) 1 and 3

ANS: A

Explanation: Fiscal consolidation in India includes:

1. Revenue reforms which include tax reforms on both direct and indirect tax front; reduction/elimination of tax exemptions and treating the revenue forgone as tax expenditure, improving efficiency of tax collection, including the arrears and stable medium term tax rates avoiding annual changes.
2. Expenditure reforms which include cutting out non-essential and unproductive activities, schemes and projects; allocation of resources to priority areas; reducing cost of services; rationalizing subsidies; reduction of time and cost overruns on projects and getting proper 'outcome' from output.

Source: EPW

Q.4) Which of the following statements defines the advantages of gender budgeting?

1. It helps in identifying the felt needs of women and reprioritizing and/or increasing expenditure to meet these needs.
2. It helps in strengthening civil society participation in economic policymaking.
3. It helps in tracking public expenditure against gender and development policy commitments.

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: Gender budgeting helps in:

- Identifying the felt needs of women and reprioritizing and/or increasing expenditure to meet these needs;
- Supporting gender mainstreaming in macroeconomics;
- Strengthening civil society participation in economic policymaking;
- Enhancing the linkages between economic and social policy outcomes;
- Tracking public expenditure against gender and development policy commitments; and
- Contributing to the attainment of the millennium development goals (MDGs).

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Source: <https://wcd.nic.in/gender-budgeting#:~:text=Gender%20Budgeting%20is%20a%20powerful,formulation%2C%20its%20implementation%20and%20review.>

Q.5) Which of the following statements regarding frictional unemployment is correct?

- It is the time period between jobs when a worker is searching for, or transitioning from one job to another.
- Frictional unemployment exists because both jobs and workers are homogeneous.
- Frictional unemployment is rarely present in an economy.
- Both (a) and (c)

ANS: A

Explanation:

- Frictional unemployment exists because both jobs and workers are heterogeneous, and a mismatch can result between the characteristics of supply and demand. Such a mismatch can be related to skills, payment, work-time, location, seasonal industries, attitude, taste, and a multitude of other factors.
- Frictional unemployment is always present in an economy, so the level of involuntary unemployment is properly the unemployment rate minus the rate of frictional unemployment, which means that increases or decreases in unemployment are normally under-represented in the simple statistics.

Source: Investopedia

Q.6) The 12th Five Year Plan has emphasized on a shift from primary agriculture to secondary agriculture in the country. What are the main advantages offered by the secondary agriculture over primary agriculture?

- Increase in production
- Adds value
- Creates jobs
- Reduces pollution

Select the correct answer using the codes given below:

- 1 and 2 only
- 2 and 3 only
- 2, 3 and 4 only
- 1, 2 and 3 only

ANS: C

Explanation:

The 12th plan would witness a shift from primary to secondary agriculture in the country. Secondary agriculture is very broad as it includes all food and non-food bio-resource based products for human and industrial use. It affects all sectors of the society with special inclusive impact on the rural population as they majorly depend upon agro-bio-resource to sustain their livelihoods.

Secondary agriculture provides the following benefits:

- Creates jobs
- Reduces pollution
- Adds value
- Improves farm economy

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5. Builds rural agro industries
6. Inclusive growth

Source: https://niti.gov.in/planningcommission.gov.in/docs/plans/planrel/fiveyr/12th/pdf/12fyp_vol1.pdf

Q.7) Priority sector lending scheme is a policy of providing a specified portion of bank lending to the important sectors of the economy. Which of the following areas are covered under priority sector lending?

1. Small-scale industrial loans.
2. Small road and water transport operators.
3. Professional and self-employed.

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: The main areas under priority sector lending scheme are as follows:

- Agriculture sector.
- Small-scale industrial loans.
- Small road and water transport operators.
- Professional and self-employed.
- Retail trade loan.
- Educational loan.
- Housing loan
- Consumption loan
- State-sponsored corporations for SC/ST

Source: <https://cleartax.in/g/terms/priority-sector-lending>

Q.8) Which of the following are considered as critical objectives for environment and development policies that follow from the concept of sustainable development?

1. Changing the quality of growth
2. Ensuring a sustainable level of population.
3. Merging environment and economics in decision making.

Select the correct answer using the codes given below:

- a) 1, 2 and 3
- b) 2 and 3 only
- c) 1 and 2
- d) 3 only

ANS: A

Explanation: Critical objectives for environment and development policies that follow from the concept of sustainable development include:

- reviving growth;
- changing the quality of growth;
- meeting essential needs for jobs, food, energy, water, and sanitation;
- ensuring a sustainable level of population;

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- conserving and enhancing the resource base;
- reorienting technology and managing risk; and
- merging environment and economics in decision making

Source: <https://sustainabledevelopment.un.org/focussdgs.html>

Q.9) Which of the following National Health Programmes come under the umbrella of National Rural Health Mission (NRHM)?

1. National Vector Borne Disease Control Programme.
2. National Leprosy Eradication Programme.
3. National Programme for Control of Blindness
4. National Iodine Deficiency disorder Control Programme.
5. National programme for Prevention and Control of Cancer.

Codes:

- a) 1, 2 and 4 only
- b) 1, 3, 4 and 5 only
- c) 1, 2, 3 and 4 only
- d) 1, 2, 3, 4 and 5

ANS: C

Explanation: Following National Health Programmes come under the umbrella of National Rural Health Mission (NRHM):

- National Vector Borne Disease Control Programme
- National Leprosy Eradication Programme
- Revised National Tuberculosis Control Programme
- National Iodine Deficiency disorder Control Programme
- National Programme for Control of Blindness

Source: <https://nhm.gov.in/>

Q.10) Consider the following statements about the inflation:

1. Creditors lose and debtors gain in the condition of inflation.
2. It makes corporations and consumers less likely to spend.
3. Domestic products become more competitive due to inflation.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: A

Explanation: Inflation

- A basic rule of inflation is that it causes the value of a currency to decline over time. In other words, cash now is worth more than cash in the future. Thus, inflation lets debtors pay lenders back with money worth less than it was when they originally borrowed it.
- Inflation can affect any business but some more so than others — negatively or positively. It makes corporations and consumers less likely to spend.
- If the inflation rate is greater than that of other countries, domestic products become less competitive.

Source: Ramesh Singh

Polity – Constitutional Bodies

Q.1) The audit report of comptroller and auditor general of India is examined by which of the following?

- a) The Estimates Committee
- b) Public Accounts Committee
- c) Committee on Public Undertakings
- d) None of the above

ANS: B

Explanation: Public Accounts Committee

- This committee was set up first in 1921 under the provisions of the Government of India Act of 1919 and has since been in existence.
- At present, it consists of 22 members (15 from the Lok Sabha and 7 from the Rajya Sabha).
- The function of the committee is to examine the annual audit reports of the Comptroller and Auditor General of India (CAG), which are laid before the Parliament by the President.

Source: Laxmikanth

Q.2) A Joint Public Service Commission for two or more states can be established by which of the following?

- a) Parliament, if requested by concerned states
- b) Rajya Sabha only
- c) Union Public Service Commission
- d) President

ANS: A

Explanation: Joint State Public Service Commission

The Constitution makes a provision for the establishment of a Joint State Public Service Commission (JSPSC) for two or more states. While the UPSC and the SPSC are created directly by the Constitution, a JSPSC can be created by an act of Parliament on the request of the state legislatures concerned. Thus, a JSPSC is a statutory and not a constitutional body. The two states of Punjab and Haryana had a JSPSC for a short period, after the creation of Haryana out of Punjab in 1966.

Source: Laxmikanth

Q.3) Who among the following can attend the meetings of both Houses of Parliament while being not a member of either house?

- a) Solicitor General of India
- b) Vice-President of India
- c) Comptroller and Auditor General of India
- d) Attorney General of India

ANS: D

Explanation: Rights and Limitations of Attorney General of India

In the performance of his official duties, the Attorney General has the right of audience in all courts in the territory of India. Further, he has the right to speak and to take part in the proceedings of both the Houses of Parliament or their joint sitting and any committee of the

Parliament of which he may be named a member, but without a right to vote. He enjoys all the privileges and immunities that are available to a member of Parliament.

Source: Laxmikanth

Q.4) Which of the following are the roles of the Finance Commission in India?

1. The distribution of money collected through taxes.
2. Evaluation of Centrally Sponsored Schemes.
3. Evolve principles based on which funds are allotted among States.

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation: Article 280 of the Indian Constitution

President after two years of the commencement of Indian Constitution and thereafter every 5 years, has to constitute a Finance Commission of India.

It shall be the duty of the Commission to make recommendations to the President in relation to the:

- the distribution between the Union and the States of the net proceeds of taxes which are to be, or maybe, divided between them and the allocation between the States of the respective shares of such proceeds;
- the principles which should govern the grants in aid of the revenues of the States out of the Consolidated Fund of India;
- any other matter referred to the Commission by the President in the interests of sound finance
- The Commission shall determine their procedure and shall have such powers in the performance of their functions as Parliament may by law confer on them

Source: Laxmikanth

Q.5) When was the National Commission for Scheduled Castes and Tribes bifurcated into the National Commission for Scheduled Castes and National Commission for Scheduled Tribes?

- a) 2003
- b) 1993
- c) 1987
- d) 1978

ANS: A

Explanation: Originally, Article 338 of the Constitution provided for the appointment of a Special Officer for Scheduled Castes (SCs) and Scheduled Tribes (STs) to investigate all matters relating to the constitutional safeguards for the SCs and STs and to report to the President on their working. He was designated as the Commissioner for SCs and STs and assigned the said duty.

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In 1978, the Government (through a Resolution) set up a non-statutory multi-member Commission for SCs and STs; the Office of Commissioner for SCs and STs also continued to exist.

In 1987, the Government (through another Resolution) modified the functions of the Commission and renamed it as the National Commission for SCs and STs.

Later, the 65th Constitutional Amendment Act of 1990 provided for the establishment of a high level multi-member National Commission for SCs and STs in the place of a single Special Officer for SCs and STs. This constitutional body replaced the Commissioner for SCs and STs as well as the Commission set up under the Resolution of 1987.

Again, the 89th Constitutional Amendment Act of 2003 bifurcated the combined National Commission for SCs and STs into two separate bodies, namely, National Commission for Scheduled Castes (under Article 338) and National Commission for Scheduled Tribes (under Article 338-A).

The separate National Commission for SCs came into existence in 2004. It consists of a chairperson, a vice-chairperson and three other members. They are appointed by the President by warrant under his hand and seal. Their conditions of service and tenure of office are also determined by the President.

Source: Laxmikanth

Q.6) Consider the following statements regarding Election Commission of India:

1. The Election Commission of India is a five member body.
2. The Election Commission decides the election schedule for the conduct of both general election and bye-election.
3. The Election Commission of India provides election symbols for newly registered parties.

Which of the statements given above is/are not correct?

- a) 1 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1 and 2 only

ANS: A

Explanation: Article 324 of the Constitution has made the following provisions with regard to the composition of election commission:

- The Election Commission shall consist of the chief election commissioner and such number of other election commissioners, if any, as the president may from time to time fix.
- The appointment of the chief election commissioner and other election commissioners shall be made by the president.

Since its inception in 1950 and till 15 October 1989, the election commission functioned as a single member body consisting of the Chief Election Commissioner. On 16 October 1989, the president appointed two more election commissioners to cope with the increased work of the election commission on account of lowering of the voting age from 21 to 18 years. Thereafter, the Election Commission functioned as a multimember body consisting of three election commissioners. However, the two posts of election commissioners were abolished in January 1990 and the Election Commission was reverted to the earlier position. Again in October 1993, the president appointed two more election commissioners. Since then and till today, the Election Commission has been functioning as a multi-member body consisting of three election commissioners.

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The powers and functions are:

- To determine the territorial areas of the electoral constituencies throughout the country on the basis of the Delimitation Commission Act of Parliament.
- To prepare and periodically revise electoral rolls and to register all eligible voters.
- To notify the dates and schedules of elections and to scrutinize nomination papers.
- To grant recognition to political parties and allot election symbols to them.
- To act as a court for settling disputes related to granting of recognition to political parties and allotment of election symbols to them.
- To appoint officers for inquiring into disputes relating to electoral arrangements.

Source: Laxmikanth

Q.7) The National Human Rights Commission has:

1. A chairperson who has been a Chief Justice of Supreme Court or a High Court of India
2. One Member who is or has been a Judge of Supreme Court
3. One Member who is, or has been the Chief Justice of a High Court
4. Two Members to be appointed from amongst persons having knowledge of or practical experience in matters relating to human rights

Select the correct answer using the code given below:

- a) 1, 2, 3 and 4
- b) 1, 2 and 3 only
- c) 1 and 4 only
- d) 2, 3 and 4 only

ANS: D

Explanation: Composition of National Human Rights Commission:

- **Chairman**- A retired Chief Justice of India.
- **4 Members**-
 - A serving or retired **judge of the Supreme Court.**
 - A serving or retired **chief justice of a High Court.**
 - 2 persons having **knowledge or practical experience with respect to human rights.**
- **4 Ex-officio members**- The **chairman** of
 - National commission for Minorities.
 - National commission for SCs.
 - National commission for SCs.
 - National commission for **Women.**

Source: Laxmikanth

Q.8) Advocate General of the State is appointed for the period of:

- a) 5 years
- b) 6 years
- c) Decided by the President
- d) No fix tenure

ANS: D

Explanation: Advocate General of the State

- The advocate general is appointed by the governor.
- He must be a person who is qualified to be appointed a judge of a high court.
- In other words, he must be a citizen of India and must have held a judicial office for ten years or been an advocate of a high court for ten years.
- The term of office of the advocate general is not fixed by the Constitution.
- Further, the Constitution does not contain the procedure and grounds for his removal.
- He holds office during the pleasure of the governor.

Source: Laxmikanth

Q.9) How long is the tenure of the Comptroller and Auditor General of India ?

- a) 6 years
- b) 5 years
- c) 4 years
- d) Tenure not fixed

ANS: A

Explanation: Constitutional Body: Article 148 provides for an independent office of the CAG. It is the supreme audit institution of India.

- Appointment: Appointed by the President of India by a warrant under his hand and seal.
- Tenure: A period of six years or up to the age of 65 years, whichever is earlier.
- Removal: CAG can be removed by the President on the same grounds and in the same manner as a judge of the Supreme Court. He does not hold his office till the pleasure of the President.

Source: Laxmikanth

Q.10) Which of the following is not a Constitutional post in India?

- a) Judge of High Court
- b) Governor of RBI
- c) Attorney General
- d) Governor of a State

ANS: B

Explanation: In India, the major constitutional bodies are:

- Union Public Service Commission (UPSC)
- State Public Service Commission
- The Comptroller, and Auditor General of India
- Election Commission of India
- Finance Commission of India
- National Commission for Scheduled Castes
- National Commission For Scheduled Tribe

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- Judges of High Courts and Supreme Court come under Comptroller and Auditor General, thus it is a constitutional post.
- The Attorney General of India is the primary lawyer of the Supreme Court and is the chief legal advisor. It is a constitutional post.

Source: Laxmikanth

Geography- Human Geography

Q.1) Which of the following statements is/are not correct regarding 'population pyramids'?

1. A bell shaped pyramid represents constant population.
2. A pyramid of narrow base and tapered top represents expanding population.
3. A triangular pyramid best represents developed countries.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation: Population pyramids:

- A population pyramid reflects the characteristics of population like age-sex structure. The shapes of pyramids represent different meanings.
- A bell shaped pyramid represents constant population and are called as Stationary or near-stationary population pyramids. It displays somewhat equal numbers or percentages for almost all age groups.
- A pyramid of narrow base and tapered top explains declining population (not expanding) like that of Japan.
- Triangular shaped pyramid explains expanding population and usually a feature of developing nations like India.
- The population pyramid of Australia is an example of expanding population and its expanding continuously.

Source: NCERT

Q.2) Which of the following demographic situation and impact of it is/are correctly matched?

1. Aging Population - Healthcare and Pensions get very expensive.
2. High dependency ratio - Increasing Workforce.
3. Negative Population growth - Schools may close and Teachers may lose their jobs.

Which of the statements given above is/are correct?

- a) One pair only
- b) Two pair only
- c) All three pair
- d) None

ANS: B

Explanation:

- Dependency Ratio is the ratio of the economically dependent part of the population to the productive part; arbitrarily defined as the ratio of the elderly (ages 65 and older) plus the young (under age 15) to the population in the working ages (ages 15-64).
- High dependency ratio states declining workforce.

Source: NCERT

Q.3) Which of the following statements is/are correct regarding the concept of a 'rural-urban fringe'?

1. A rural-urban fringe represents an incoherent transitional landscape.
2. Rural-Urban fringe of the modern city only possesses urban characteristics.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Rural - Urban fringe:

- Rural-Urban fringe (R-U fringe) is a transitional zone and could be recognized recently on social grounds by the presence of rural and urban groups.
- The city does not grow outwards in well-defined patterns. It sprawls haphazardly, making rapid advances at one point, and hardly moving at all at another.
- This results into incoherent landscape which is the characteristics of the fringe.
- Another characteristic and a unique quality is a wide mix of land uses ranging from a variety of commercial developments, including out-of-town shopping centers', to the city services and industries which are conveniently located at the margins.
- Urban fringe of the modern city is a significant area because it signifies both urban as well as rural characteristics. This should not be treated as two distinct zones as the city merges perceptibly into rural countryside by way of mixed land uses.

Source: NCERT

Q.4) National Commission on Population is headed by which of the following entity?

- a) President
- b) Prime Minister
- c) Registrar General of India
- d) None

ANS: B

Explanation: National Commission on Population:

- It is chaired by the Prime Minister.
- Chief Ministers of all states, ministers of the related central ministries, secretaries of the concerned departments, eminent physicians, demographers and the representatives of the civil society are members of the commission.

Mandate: **The commission has the mandate:**

- To review, monitor and give direction for implementation of the National Population Policy with the view to achieve the goals set in the Population Policy.
- Promote synergy between health, educational environmental and developmental programmes so as to hasten population stabilization.
- Promote inter sectoral coordination in planning and implementation of the programmes through different sectors and agencies in center and the states.
- Develop a vigorous people's programme to support this national effort.

Source: The Hindu

Q.5) Which of the following pairs of tribes is/are correctly matched?

1. Malasar tribe – Kerala
2. Jatapu tribes – Nagaland
3. PahadiKorva tribes – Chattisgarh
4. Asur tribe – Jharkhand

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Which of the statements given above is/are correct?

- a) One pair only
- b) Two pair only
- c) Three pair only
- d) All four pair

ANS: C

Explanation: Major Tribes in India

Andhra Pradesh: Andh, Sadhu Andh, Bhagata, Bhil, Chenchus (Chenchawar), Gadabas, Gond, Goundu, Jatapus, Kammara, Kattunayakan, Kolawar, Kolam, Konda, Manna Dhora, Pardhan, Rona, Savaras, Dabba Yerukula, Nakkala, Dhulia, Thoti, Sugalis, Banjara, Kondareddis, Koya, Mukha Dhora, Valmiki, Yenadis, Sugalis, Lambadis.
Arunachal Pradesh: Apatanis, Abor, Dafla, Galong, Momba, Sherdukpen, Singpho, Nyishi, Mishmi, Idu, Taroan, Tagin, Adi, Monpa, Wancho
Assam: Chakma, Chutiya, Dimasa, Hajong, Garos, Khasis, Gangte, Karbi, Boro, Borokachari, Kachari, Sonwal, Miri, Rabha, Garo
Bihar: Asur, Baiga, Birhor, Birjia, Chero, Gond, Parhaiya, Santhals, Savar, Kharwar, Banjara, Oraon, Santal, Tharu
Chhattisgarh: Agariya, Bhaina, Bhattra, Biar, Khond, Mawasi, Nagasia, Gond, Binjhar, Halba, Halbi, Kawar, Sawar,
Goa: Dhodia, Dubia, Naikda, Siddi, Varli, Gawda.
Gujarat: Barda, Bamcha, Bhil, Charan, Dhodia, Gamta, Paradhi, Patelia, Dhanka, Dubla, Talavia, Halpati, Kokna, Naikda, Patelia, Rathawa, Siddi.
Himachal Pradesh: Gaddis, Gujjars, Khas, Lamba, Lahaulas, Pangwala, Swangla, Beta, Beda Bhot, Bodh.
Jammu and Kashmir: Bakarwal, Balti, Beda, Gaddi, Garra, Mon, Purigpa, Sippi, Changpa, Gujjar.
Jharkhand: Birhors, Bhumij, Gonds, Kharia, Mundas, Santhals, Savar, Bedia, Ho, Kharwar, Lohra, Mahli, Parhaiya, Santal, Kol, Banjara.
Karnataka: Adiyani, Barda, Gond, Bhil, Iruliga, Koraga, Patelia, Yerava, Hasalaru, Koli Dhor, Marati, Meda, Naikda, Soligar.
Kerala: Adiyani, Arandan, Eravallan, Kurumbas, Malai arayan, Moplals, Uralis, Irular, Kanikaran, Kattunayakan, Kurichchan, Muthuvan, Malasar
Madhya Pradesh: Baigas, Bhils, Bharia, Birhors, Gonds, Katkari, kharia, Khond, Kol, Murias, Korku, Mawasi, Pardhan, Sahariya,
Maharashtra: Bhaina, Bhunjia, Dhodia, Katkari, Khond, Rathawa, Warlis, Dhanka, Halba, Kathodi, Kokna, Koli Mahadev, Pardhi, Thakur,
Manipur: Naga, Kuki, Meitei, Aimol, Angami, Chiru, Maram, Monsang, Paite, Purum, Thadou, Anal, Mao, Tangkhul, Thadou, Poumai Naga.
Meghalaya: Chakma, Garos, Hajong, Jaintias Khasis, Lakher, Pawai, Raba, Mikir.
Mizoram: Chakma, Dimasa, Khasi, Kuki, Lakher, Pawi, Raba, Synteng, Lushai
Nagaland: Angami, Garo, Kachari, Kuki, Mikir, Nagas, Sema, Ao, Chakhesang, Konyak, Lotha, Phom, Rengma, Sangtam,
Odisha: Gadaba, Ghara, Kharia, Khond, Matya, Oraons, Rajuar, Santhals, Bathudi, Bathuri, Bhattada, Bhumij, Gond, Juang, Kisan, Kolha, Kora, Khayara, Koya, Munda, Paroja, Saora, Shabar, Lodha.

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Rajasthan: Bhils, Damaria, Dhanka, Meenas(Minas), Patelia, Sahariya, Naikda, Nayaka, Kathodi.
Sikkim: Bhutia, Khas, Lepchas, Limboo, Tamang
Tamil Nadu: Adiyar, Aranadan, Eravallan, Irular, Kadar, Kanikar, Kotas, Todas, Kurumans, Malayali,
Telangana: Chenchus.
Tripura: Bhil, Bhutia, Chaimal, Chakma, Halam, Khasia, Lushai, Mizel, Namte, Mag, Munda, Rieng,
Uttarakhand: Bhotias, Buksa, Jannasari, Khas, Raji, Tharu.
Uttar Pradesh: Bhotia, Buksa, Jaunsari, Kol, Raji, Tharu, Gond, Kharwar, Saharya , Parahiya, Baiga, Agariya, Chero
West Bengal: Asur, Khond, Hajong, Ho, Parhaiya, Rabha, Santhals, Savar, Bhumij, Bhutia, Chik Baraik, Kisan, Kora, Lodha, Kheria, Khariam, Mahali, Mal Pahariya, Oraon,
Andaman and Nicobar: Oraons, Onges, Sentinelese, Shompens.

Source: Ministry of Tribes

Q.6) Consider the following statements:

1. Ecumene refers to the uninhabited or uninhabitable area of the world.
2. Non-Ecumene refers to the inhabited areas or very sparsely inhabited areas of the world.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: Geographers identify two population density divisions of the world:

- Ecumene refers to the inhabited areas of the world whereas.
- Non-ecumene refers to the uninhabited or very sparsely inhabited areas.

Source: Savindra Singh

Q.7) Which of the following pairs related to rural settlement pattern is/are correct?

1. Linear settlement pattern - along mountain ranges
2. Rectangular Pattern - agricultural area
3. Radial pattern - for defence purpose
4. Circular patter - near major commercial activity centre

Which of the statements given above is/are correct?

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- a) One pair only
- b) Two pair only
- c) Three pair only
- d) All four pair

ANS: B

Explanation: Circular pattern:

Circular villages develop around lakes, tanks and sometimes the village is planned in such a way that the central part remains open and is used for keeping the animals to protect them from wild animals.

Linear pattern: In such settlements houses are located along a road, railway line, river, canal edge of a valley or along a levee.

Rectangular pattern: Such patterns of rural settlements are found in plain areas or wide inter montane valleys. The roads are rectangular and cut each other at right angles.

Source: Majid Hussain

Q.8) The movement of people from central cities to smaller communities in the surrounding area is known as:

- a) Reverse migration
- b) Under urbanization
- c) Sub-urbanization
- d) Over urbanization

ANS: C

Explanation: Sub Urbanization:

It is a new trend of people moving away from congested urban areas to cleaner areas outside the city in search of a better quality of living. Important suburbs develop around major cities and everyday thousands of people commute from their homes in the suburbs to their work places in the city.

Source: Majid Hussain

Q.9) Consider the following statements:

1. In this type of village the general living area is distinct and separated from surrounding farms and pastures.
2. The closely build up area and its intervening streets presents some recognizable pattern or geometric shape.
3. This type of settlements sometimes forms for defense and security reasons.

The above given statements describe which type of rural settlement?

- a) Hamleted settlement
- b) Dispersed settlement
- c) Semi-clustered settlement
- d) Clustered settlement

ANS: D

Explanation: Clustered Settlements:

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- The clustered rural settlement is a compact or closely built up area of houses. In this type of village, the general living area is distinct and separated from the surrounding farms, barns and pastures.
- The closely built-up area and its intervening streets present some recognisable pattern or geometric shape, such as rectangular, radial, linear, etc. Such settlements are generally found in fertile alluvial plains and in the north-eastern states.
- Sometimes, people live in compact village for security or defence reasons, such as in the Bundelkhand region of central India and in Nagaland. In Rajasthan, scarcity of water has necessitated compact settlement for maximum utilisation of available water resources.

Semi-Clustered Settlements:

- Semi-clustered or fragmented settlements may result from tendency of clustering in a restricted area of dispersed settlement. More often such a pattern may also result from segregation or fragmentation of a large compact village.

Hamleted Settlements:

- Sometimes settlement is fragmented into several units physically separated from each other bearing a common name. These units are locally called panna, para, palli, nagla, dhani, etc. in various parts of the country.

Dispersed Settlements:

- Dispersed or isolated settlement pattern in India appears in the form of isolated huts or hamlets of few huts in remote jungles, or on small hills with farms or pasture on the slopes. Extreme dispersion of settlement is often caused by extremely fragmented nature of the terrain and land resource base of habitable areas.

Source: Majid Hussain

Q.10) Which of the following are the 'push' factors of migration in India?

1. Unpleasant climate
2. Security of life and property
3. Peace and stability
4. Epidemics

Select the correct answer using the codes given below:

- a) 1 and 4 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3 only

ANS: A

Explanation: Push factors for the migration:

- Unemployment.
- Political Turmoil.
- Epidemics.
- Social backwardness.
- Poor living conditions.
- Natural disaster.
- Unpleasant climate.
- Epidemics.
- Socio-economic backwardness.

Pull factors:

- Security of life.
- Better job opportunities and living conditions.
- Peace and stability.
- Pleasant climate.

Source: Majid Hussain

Environment

Q.1) Consider the following statements about Oil spills:

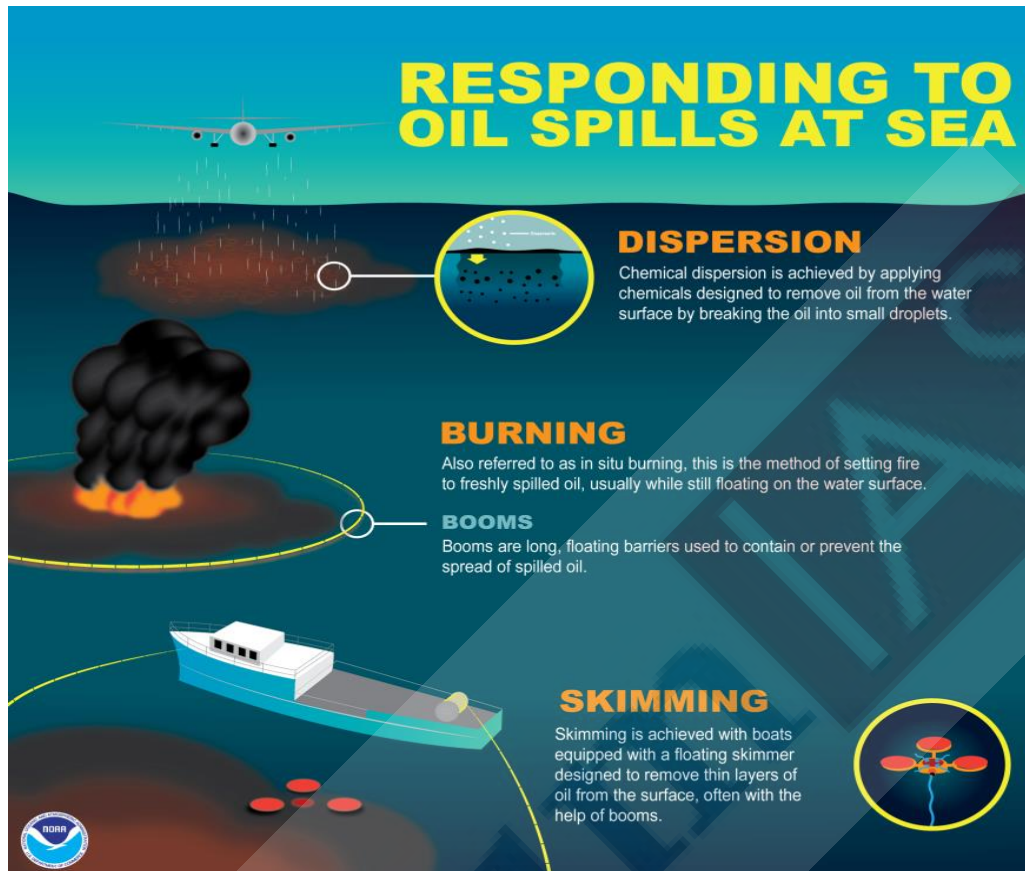
1. Oil spills decreases the level of dissolved oxygen in water killing marine organisms.
2. Oil spills can be controlled by chemical dispersion and combustion.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Oil Spills are very difficult to control as oil tends to spread very fast affecting a large area over shorter time. Their impact is detrimental to the subjected environment (land, water, air). Oil films retard the dissolved oxygen, decreases light penetration.



Source: <https://response.restoration.noaa.gov/about/media/how-do-oil-spills-out-sea-typically-get-cleaned.html>

Q.2) Which of the following statements is/are correct regarding the impact of mining activities on the environment?

1. Mine drainage can modify water pH and temperature and make the groundwater acidic.
2. It destroys landscapes which in turn lead to soil erosion and destruction of agricultural land.
3. It does not impact species in areas of excavation and piling of mine wastes.

Select the correct answer using the codes given below:

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3

ANS: C

Explanation: Impact of Mining:

Sulphur, usually present as an impurity in many ores gets converted into sulphuric acid through microbial action, thereby making the water acidic. Sometimes radioactive substances like uranium also contaminate the water bodies through uranium mine wastes and kill aquatic animals. Miners working in different types of mines suffer from asbestosis, silicosis, black lung disease etc.

The most direct effect on wildlife is destruction or displacement of species in areas of excavation and piling of mine wastes. Mobile wildlife species, like game animals, birds, and predators, leave

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these areas. More sedentary animals, like invertebrates, many reptiles, burrowing rodents, and small mammals, may be more severely affected.

Habitat modification such as pH and temperature modification disturb communities in the area.

Source: Environmental Law Alliance Worldwide (ELAW)

Q.3) Which of the following indoor air pollutants and its source is/are correctly matched?

1. Volatile Organic Compounds (VOCs) - perfumes and hair sprays.
2. Polyvinyl Chloride (PVC) - window frames and indoor plumbing.
3. Formaldehyde - from carpets and insulation foam.

Select the correct answer using the codes given below:

- a) One pair only
- b) Two pairs only
- c) All Three pairs
- d) None

ANS: C

Explanation: Volatile organic compounds originate mainly from solvents and chemicals. The main indoor sources are perfumes, hair sprays, furniture polish, glues, air fresheners, moth repellents, wood preservatives, and many other products used in the house.

Pesticides, if used carefully and the manufacturers, instructions followed carefully they do not cause too much harm to the indoor air.

Biological pollutants include pollen from plants, mite, hair from pets, fungi, parasites, and some bacteria. Most of them are allergens and can cause asthma, hay fever, and other allergic diseases.

Formaldehyde is a gas that comes mainly from carpets, particle boards, and insulation foam. It causes irritation to the eyes and nose and may cause allergies in some people.

Asbestos is mainly a concern because it is suspected to cause cancer.

Radon is a gas that is emitted naturally by the soil. Due to modern houses having poor ventilation, it is confined inside the house causing harm to the dwellers.

PVC is used in an enormous range of domestic and industrial products, from raincoats and shower curtains to window frames and indoor plumbing.

Source: <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality#:~:text=Some%20sources%2C%20such%20as%20building,doing%20hobbies%20releas,e%20pollutants%20intermittently.>

Q.4) India has high incidences of high deaths due to water related diseases. Consider the following statements about water borne diseases:

1. Japanese encephalitis is majorly found in the urban regions of India.
2. Filariasis and Malaria is spread by parasites that breed in contaminated water bodies.

Which of the above statements is/are true?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: Water related diseases are the most common cause of deaths. And India is no different. Deaths due to water related diseases in India are in the range of nearly 80 percent.

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Cholera can happen to both children and adults. Japanese encephalitis is majorly found in the agricultural regions of India. Filariasis and Malaria is spread by parasites that breed in fresh and stagnant water bodies. Diarrhea remains the most prevalent water related disease in India.

Source: <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>

Q.5) Consider the following statements about the Particulate Matter:

1. It is a complex mixture of solid and gaseous pollutants, only caused by manmade activities.
2. Sulphates and organic compounds are its major components.

Which of the above given statements is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: PM is a sum of all microscopic solid and liquid particles, of human and natural origin, that remain suspended in a medium such as air for some time. These particles vary greatly in size, composition, and origin, and may be harmful. Particulate matter may be in the form of fly ash, soot, dust, fog, fumes etc.

Particulate pollution does not include gas pollutants like ozone and NO₂. PM 10 is particles 10 microns and below. PM 2.5 is 2.5 microns and below. (That means PM 10 includes PM 2.5.)

The major components of PM include metals, organic compounds (measured as organic carbon [OC]) including materials of biological origin, inorganic carbonaceous material (including black carbon [BC] and elemental carbon [EC]), and sulfate, nitrate, ammonium, and other ions.

Source: Shankar IAS

Q.6) Which of the following compounds are present in the chemical composition of Fly Ash?

1. Aluminum silicate
2. Silicon dioxide
3. Calcium oxide
4. Sulfur oxide

Select the correct answer using the codes given below:

- a) 2 and 3 only
- b) 2, 3 and 4 only
- c) 1, 2 and 3 only
- d) 1, 2, 3 and 4

ANS: C

Explanation: Fly ash, also known as pulverized fuel ash in the United Kingdom, is a coal combustion product composed of fine particles that are driven out of the boiler with the flue gases. Ash that falls in the bottom of the boiler is called bottom ash. In modern coal-fired power plants, fly ash is generally captured by electrostatic precipitators or other particle filtration equipment before the flue gases reach the chimneys.

Chemical Composition of fly ash:

- Aluminum silicate (enlarge amounts);
- Silicon dioxide (SiO₂); and

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- Calcium oxide (CaO).

Source: Shankar IAS

Q.7) With respect to ecological footprint, which of the following statement is correct?

- It focuses strictly on the greenhouse gases released due to burning of fossil fuels.
- It measures the impact of human activities on ocean resources.
- It is an estimate of an individual's environmental impact, based on the lifestyle and income of particular persons.
- None of the above.

ANS: C

Explanation: The Ecological Footprint measures the amount of biologically productive land and water area an individual, a city, a country, a region, or all of humanity uses to produce the resources it consumes and to absorb the waste it generates with today's technology and resource management practices.

Ecological Footprints can be calculated for individual people, groups of people (such as a nation), and activities (such as manufacturing a product).

The Ecological Footprint of a person is calculated by considering all of the biological materials consumed, and all of the biological wastes generated, by that person in a given year.

These materials and wastes each demand ecologically productive areas, such as cropland to grow potatoes, or forest to sequester fossil carbon dioxide emissions.

All of these materials and wastes are then individually translated into an equivalent number of global hectares.

Source: Shankar IAS

Q.8) Which of the following is/are considered as point sources of water pollution?

- Factories
- Sewage treatment plants
- Oil tankers
- Acid deposition
- Livestock feedlots

Select the correct answer using the codes given below:

- 1, 2 and 3 only
- 2, 3 and 5
- 4 and 5

d) 2, 4 and 5 only

ANS: A

Explanation: Point and non-point sources of water pollution. Point sources are pollutants that are discharged at specific locations through pipes, ditches or sewers into bodies of surface waters. Ex: Factories, sewage treatment plants, abandoned underground mines and oil tankers. Non point sources these pollutants cannot be traced to a single point of discharge. They are large land areas or air-sheds that pollute water by runoff, subsurface flow or deposition from the atmosphere. Ex: Acid deposition, runoff of chemicals into surface water from croplands, livestock feedlots, logged forests, urban streets, lawns, golf courses and parking lots.

Source: <https://www.britannica.com/topic/point-source-pollutant>

Q.9) Which of the following terms associated with the plastic pollution have been correctly defined?

1. Plastiglomerate: It is formed when plastic trash melts and fuses together with natural materials as sand and basalt.
2. Plastisphere: It is a term used to refer to ecosystems that have evolved to live in human-made plastic environments.
3. Microdebris: Plastic debris when it is larger than 20 mm.

Select the correct answer using the codes given below:

- a) One pair only
- b) Two pairs only
- c) All three pairs only
- d) None

ANS: C

Explanation: Plastisphere is a term used to refer to ecosystems that have evolved to live in human-made plastic environments. Plastic that has made its way into marine habitats has been found to host various microorganisms.

Microdebris are plastic pieces between 2 mm and 5 mm in size. Plastic debris that starts off as meso- or macrodebris can become microdebris through degradation and collisions that break it down into smaller pieces.

Plastic debris is categorized as macrodebris when it is larger than 20 mm. These include items such as plastic grocery bags.

Plastiglomerate is a term that was proposed by Patricia Corcoran, Charles J. Moore and Kelly Jazvac for a stone that contains mixtures of sedimentary grains, and other natural debris (e.g. shells, wood) that is held together by hardened molten plastic. It has been considered a potential marker of the Anthropocene, an informal epoch of the Quaternary proposed by some social scientists, environmentalists, and geologists.

Source: <https://www.britannica.com/science/plastic-pollution>

Q.10) Consider the following pairs related to the different techniques:

1. Bio Venting : ex situ method of treating soils contaminated by petroleum hydrocarbons.
2. Bioremediation : use of micro organisms in extraction of metals from their ores.
3. Bio Reactors : ex situ technique of treating groundwater contaminants.

Which of the above given pairs is/are correctly matched?

- a) 1 and 2 only
- b) 2 and 3 only

- c) 1 and 3 only
- d) 1 only

ANS: B

Explanation: Bio-venting is one of the most widely used in situ methods of remediating soils contaminated by petroleum hydrocarbons.

Land farming is an ex situ bio remediation technique used to dispose of oily sludge from petroleum refinery operations.

Composting, Land farming, Bio reactors and Bio piles are ex situ bioremediation techniques where as bio venting is an in situ bioremediation technique.

Bioleaching (or biomining) is a process in mining and biohydrometallurgy (natural processes of interactions between microbes and minerals) that extracts valuable metals from a low-grade ore with the help of microorganisms such as bacteria or archaea.

Source: The Hindu

History – Medieval History

Q.1) The concept of 'Zil-i-illahi' or 'Shadow of God' introduced by Balban refers to :

- a) The rule of king on the basis of divine sanction and not answerable to anyone.
- b) The idea of kingship is derived from Sassanid Persia.
- c) The Universal Principle of harmony and peace.
- d) The idea of a superior religion for masses.

ANS: A

Explanation: BALBAN Zil-E-Ilahi:

- Balban ascended the throne in 1266.
- He broke the power of Chalisa and resorted the prestige of the crown. That was his greatest contribution towards the stability of the Sultanate.
- To keep himself well-informed Balban appointed spies.
- He created a strong centralised army to deal with internal disturbances and to cheek Mongols who were posing a serious danger to Delhi Sultante.
- He established the military department Diwani-i-Arz
- The Persian court model influenced balban's conception of Kingship. He took up the title of Zil-i-Ilahi(Shadow of God). He believed that he ruled on the basis of Divine Sanction and was not answerable to anyone.

Source: NCERT

Q.2) Which of the following policies are associated with Akbar's administration?

1. Decree of infallibility
2. Bandobast system
3. Mansabdari

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

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ANS: D

Explanation: Akbar's Administrative Policies:

- Akbar introduced the Mansabdari system in his administration. Under this system every officer was assigned a rank (mansab). The ranks were divided into two - zat and sawar.
- He disliked the interference of the Muslim Ulemas in political matters.
- In 1579, he issued the "Infallibility Decree" by which he asserted his religious powers.
- Akbar made some experiments in the land revenue administration with the help of Raja Todar Mal. The land revenue system of Akbar was called Zabti or Bandobast system. It was known as Dahsala System which was completed in 1580.

Source: NCERT

Q.3) Barid-i-Mumalik or Munihiyan in the context of Medieval Indian history refers to:

- a) Tax Collector
- b) Bodyguards of the Emperor.
- c) The spy department or intelligence officers.
- d) Officer-in-charge of state exchequer.

ANS: C

Explanation: Barid-i-Mumalik:

- Barid-i-Mumalik was the head of the information and intelligence department. Only a nobleman who enjoyed the fullest confidence of Sultan was appointed the chief barid.
- The Barid-i-Mumalik had to keep information of all that was happening in the Sultanate.
- At local level there were barids who used to send regular news concerning the matters of the state to the central office.
- Apart from Barids, another set of reporters also existed who were known as Munihiyan.

Source: NCERT

Q.4) Under Vijaynagara empire, a system of village organization comprising of 12 functionaries conducting every village affair refers to:

- a) Manyoms system
- b) Auagar System
- c) Agaram style
- d) Vidyaranya style

ANS: B

Explanation: Vijayanagara Administration:

- The Auagar system was an important feature of the Vijayanagara village organization.
- It is the Body of twelve functionaries, known as "Auagars".
- It conducted every village affair. They were granted tax free lands "Manyoms", which they were to enjoy in perpetuity.

Source: NCERT

Q.5) Which of the following pairs regarding the administration of Delhi Sultanate are correctly matched?

- | Post | Department |
|---------------------|------------------------|
| 1. Diwan- i-Bandgan | : Department of Slaves |

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2. Diwan -i-Isthiaq : Department of Pensions
3. Diwan -i-Wizarat : Department of Finances
4. Diwan-i-Ariz : Department of Military

Select the correct answer using the codes given below:

- a) One pair only
- b) Two pair only
- c) Three pair only
- d) All four pairs

ANS: D

Explanation:

Department	Category of Department	Function of the Department
Diwan-i-Risalat	Department of appeals	In charge of foreign affairs and dealing with diplomatic correspondences
Diwan-i-arz	Department of Military	Responsible for maintaining the royal army and recruiting troops. This department was introduced by Balban
Diwan-i-Ishtiaq	Department of pensions	In charge of pensions
Diwan-i-Mustakhraj	Department of arrears	This was the department of revenue
Diwan-i-kohi	Department of agriculture	In charge of managing the agricultural activities in the kingdom. This department was created by Muhammad Bin Tughlaq
Diwan-i-insha	Department of correspondence	In charge of the royal correspondence and the regulations set by the Sultans were the basis of law
Diwan-i-Bandagan	Department of slaves	In charge of slaves
Diwan-i-Qaza	Department of justice	Managing justice in the empire
Diwan-i-Khairat	Department of charity	In charge of charity in the kingdom

Source: Tamil Nadu Board

Q.6) Which of the following statements is/are correct regarding the Alvars of the Bhakti movement?

1. They were the devotees of lord Shiva and hence called Shaivites.
2. They initiated a movement of protest against the caste system.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Bhakti Movement- ALVARs:

- Some of the earliest Bhakti Movements (c. Sixth century) were led by the Alvars.

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- Alvars were literally those who were immersed in devotion to Vishnu and Nayanars were the devotees of Shiva.
- They travelled from place to place singing hymns in Tamil in praise of their gods.
- The devotees hailed from diverse social backgrounds ranging from Brahmanas to artisans and cultivators and even from castes considered 'untouchable'.

Source: Tamil Nadu Board

Q.7) The 'Amara-Nayaka System' was a major political innovation of which of the following medieval kingdoms?

- a) Pallavas
- b) Mauryan
- c) Chalukyas
- d) Vijayanagara

ANS: D

Explanation: Amara Nayak System:

- The Amara-Nayaka system was a major political innovation of the Vijayanagar Empire. It is likely that many features of this system were derived from the IQTA system of the Delhi Sultanate.
- The Amara-Nayakas were military commanders who were given territories to govern.
- They collected taxes and other dues from peasants, crafts persons and traders in the area. They retained part of the revenue for personal use and for maintaining a stipulated contingent of horses and elephants.

Source: Tamil Nadu Board

Q.8) Which of the following best explains the term Kharaj?

- a) Worship tax on Hindus
- b) Education Tax
- c) Poll or a head tax
- d) Individual Islamic land tax

ANS: D

Explanation: Islamic Law – KHARAJ:

- Kharajis a type of individual Islamic tax on agricultural land and its produce developed under Islamic law.
- It was first imposed only on non-Muslims but which was later imposed on Muslims as well.

Source: Tamil Nadu Board

Q.9) Consider the following statements regarding the Third battle of Panipat:

1. It was fought between Marathas and Ahmad Shah Abdali.
2. Just after the battle, Marathas entered into treaty with Mughals for collecting Chauth all over India.
3. Division of the Mughal nobility in contending groups was one of the reason for the battle.

Which of the above statements is/are correct?

- a) 1 and 2 Only
- b) 2 and 3 Only
- c) 1 and 3 only
- d) 3 only

ANS: C

Explanation: Third Battle of Panipat:

- The most important event of the period of Balaji was the third battle of Panipat which was fought between the Marathas and Ahmad Shah Abdali, the ruler of Afghanistan. In 1761 AD.
- The Peshwa entered into a treaty with the Mughul emperor in 1752 A.D. By it the Mughul emperor gave the Marathas the right to collect chauth and sardeshmukhi from all over India and, in return, the Marathas were obliged to help the Emperor in times of need. Thus, the Marathas involved themselves directly with the politics at Delhi.
- The weakness of Mughul emperors, the division of the nobility in contending groups, the ambition of the Marathas to gain influence in the North were the primary causes of the third battle of Panipat.

Source: NCERT

Q.10) Consider the following statements regarding the Sikh Gurus:

1. Guru Arjan Dev compiled the writings of Nanak Dev in Guru Granth Sahib in Gurmukhi Script.
2. Guru Ram Das founded the city of Amritsar.
3. Guru Gobind Singh Sahib created the Khalsa.

Which of the above statements are correct?

- a) 1 and 2 Only
- b) 2 and 3 Only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation: Sikh Gurus

- The era of the ten gurus of Sikhism spans from the birth of Nanak Dev in 1469, through the life of Guru Gobind Singh. At the time of Guru Gobind Singh's death in 1708, he passed the title of Guru to the Sikh scripture, Guru Granth.
- Guru Nanak Dev - Guru from 1469 to 1539. Guru Nanak Dev, first of the 10 gurus, founded the Sikh faith, introducing the concept of one God. He started the institution of Guru Ka Langar. Langar is the term in the Sikh religion refers to the common kitchen where food is served to everyone without any discrimination.
- Guru Angad Dev - Guru from 1539 to 1552. Guru Angad Dev, second of the 10 gurus, invented and introduced the Gurmukhi (written form of Punjabi) script. He compiled the writings of Nanak Dev in Guru Granth Sahib in Gurmukhi Script.
- Guru Ram Das - Guru from 1574 to 1581. Guru Ram Das, fourth of the 10 gurus, founded the city of Amritsar. He started the construction of the famous Golden Temple at Amritsar, the holy city of the Sikhs.

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- Guru Gobind Singh Sahib - Guru from 1675 to 1708. He became Guru after the martyrdom of his father Guru Tegh Bahadur. He created the Khalsa in 1699, changing the Sikhs into a saint-soldier order for protecting themselves.

Source: NCERT

Schemes/ Programmes/ Institutions

Q.1) Consider the following countries:

1. Kazakhstan
2. Belarus

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3. Tajikistan

4. Iran

Which of the above mentioned countries is/are members of Shanghai Cooperation Organization (SCO)?

- a) 1 and 4 only
- b) 2, 3 and 4 only
- c) 1 and 3 only
- d) 1, 3 and 4 only

ANS: C

Explanation: Expansion of the Shanghai Cooperation Organization (SCO): Iran and Belarus might join

- **The SCO has 8 members at present:** India, Russia, China, Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan and Pakistan.
- Iran and Belarus might join as new members soon. In the 2021 summit in Dushanbe, the members of SCO agreed to admit Iran as a member.
- Belarus has also applied for the membership.
- China and Russia are looking to frame the SCO as a counter to the West — particularly after Russia's invasion of Ukraine.

Source: EPIC July 2022

Q.2) "Mo Bus Service", which are designed to integrate smart technologies such as free onboard Wi-Fi service, digital announcements, surveillance cameras, and electronic ticketing, have been launched in which of the following state/UT?

- a) Delhi
- b) Odisha
- c) Madhya Pradesh
- d) Chandigarh

ANS: B

Explanation: Mo Bus Service:

- It was launched by the Government of Odisha in 2018 to serve the public transport needs of Odisha's Capital Region (Bhubaneswar, Cuttack).
- The Mo buses are designed to integrate smart technologies such as free onboard Wi-Fi service, digital announcements, surveillance cameras, and electronic ticketing.
- An e-Rickshaw system called 'Mo e-Ride' is also introduced as a last-mile feeder service to Mo Bus.
- 57% of the commuters in the city are now using Mo Bus. e-Ride will promote a green, sustainable transportation solution with an estimated pollution reduction of 30 – 50%. 40% of Mo Bus conductors are women and 100% of Mo E-Ride drivers are women, transgender people and people from disadvantaged communities.
- Mo Bus was one of the 10 recipients of the UN Public Service Award (UNPSA) for 2022.

Source: EPIC July 2022

Q.3) 'Leave it In the Ground' Group has been related to which of the following?

- a) E-waste
- b) Rare Earth Minerals

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- c) Carbon Bombs
- d) Radioactive materials

ANS: C

Explanation: 'Leave it In the Ground' Group:

A group of environmentalists, lawyers and activists have come together to 'defuse the carbon bombs'. The group is called Leave It In the Ground Initiative (LINGO). Its mission is to leave fossil fuels in the ground and learn to live without them. It believes that 100% use of renewable energy sources is the solution to global warming.

Carbon Bomb

A Carbon Bomb is 'an oil or gas project that will result in at least a billion tonnes of CO2 emissions over its lifetime'. In total, around 195 such projects have been identified the world over. The listed carbon bomb projects include Carmichael Coal Project (Australia) owned by the Adani Group, Gevra Coal Mines in Chhattisgarh owned by Coal India, and Rajmahal Coal Mines in eastern Jharkhand owned by Eastern Coalfields.

Source: EPIC July 2022

Q.4) Consider the following statements about EU's Nature Restoration Law:

1. It aims to cover at least 50% of the EU's land and sea areas by 2030 with nature restoration measures.
2. It aims to halve the use of pesticides across Europe by 2030.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: EU's Nature Restoration Law:

- The European Commission (EC) has unveiled a draft 'Nature Restoration Law' to restore nature and mitigate climate change on the European continent.
- It aims to cover at least 20% of the EU's land and sea areas by 2030 with nature restoration measures, and extend these to all ecosystems in need of restoration by 2050.
- It sets several targets like to halve the use of pesticides across Europe by 2030, no net loss of green urban spaces by 2030 etc.
- The EU countries and the European Parliament will need to approve the draft legislation before it becomes law.
- Under the law, ~€100 billion (\$105 billion) will be available for biodiversity spending, including restoration.

Source: EPIC July 2022

Q.5) "King Hamad Bin Isa Al-Khalifa Prize" is awarded by which of the following?

- a) Saudi Arabia
- b) Iran
- c) UNESCO
- d) Organisation of Islamic Cooperation

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ANS: C

Explanation: UNESCO Award to CIET:

- The Central Institute of Educational Technology (CIET) has been awarded the UNESCO's King Hamad Bin Isa Al-Khalifa Prize.
- The award has been given for use of ICT in Education under a comprehensive initiative called PM eVIDYA.
- PM eVIDYA was launched in 2020 by the Ministry of Education.
- It is a comprehensive initiative which unifies all efforts related to digital/online/on-air education to enable multimode access to education.

Source: EPIC July 2022

Q.6) Consider the following statements about National Industrial Corridor Development Programme (NICDP):

1. National Industrial Corridor Development and Implementation Trust (NICDIT) is the implementing agency.
2. It aims to develop new industrial cities as 'Smart Cities' and converge next-generation technologies across infrastructure sectors.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: National Industrial Corridor Development Programme (NICDP):

It is India's most ambitious infrastructure programme aiming to develop new industrial cities as 'Smart Cities' and converge next-generation technologies across infrastructure sectors.

Its objective is to

- (a) expand the industrial output;
- (b) increase employment opportunities;
- (c) provide better living and social facilities for the new and growing workforce.

NICDC is developing 11 Industrial corridors comprising 32 projects in 4 Phases. The Asian Development Bank (ADB) and the Government of India have signed a \$250 million loan to support the NICDP. National Industrial Corridor Development and Implementation Trust (NICDIT) is the implementing agency.

Source: EPIC July 2022

Q.7) 'Sambal' and 'Samarthya' are sub-schemes of which of the following?

- a) Mission Shakti
- b) Beti Bachao- Beti Padhao
- c) One Stop Centre Scheme
- d) Support to Training and Employment Programme for Women (STEP) Scheme

ANS: A

Explanation: Mission Shakti:

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It has been launched by the Ministry of Women Child Development (MWCD). It is a mission mode scheme aimed at strengthening interventions for women's safety, security and empowerment. 'Mission Shakti' has two sub-schemes – 'Sambal' and 'Samarthya'.

- **Sambal:** It is for safety and security of women.
 - The components consist of erstwhile schemes of One Stop Center (OSC), Women Helpline (WHL), Beti Bachao Beti Padhao (BBBP) with a new component of Nari Adalats – women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.
- **Samarthya:** It is for the empowerment of women.
 - The components consist of erstwhile schemes of Ujjwala, Swadhar Greh and Working Women Hostel have been included with modifications.
 - The existing schemes of National Creche Scheme for children of working mothers and Pradhan Mantri Matru Vandana Yojana (PMMVY) under umbrella ICDS have also been included.
 - A new component of Gap Funding for Economic Empowerment has also been added.

Source: EPIC July 2022

Q.8) "Balika Panchayat", an initiative under the 'Beti Bachao Beti Padhao' campaign has been launched by which of the following state?

- a) Rajasthan
- b) Tamil Nadu
- c) Manipur
- d) Gujarat

ANS: D

Explanation: Balika Panchayat:

It is an initiative of the Gujarat Government under the 'Beti Bachao Beti Padhao' campaign. Its aim is to promote the social and political development of the girls and to ensure their active participation in politics. Balika Panchayat is managed by girls in the 11-21 age groups. Members of the Balika Panchayat are elected after an intense campaigning process.

Source: EPIC July 2022

Q.9) Which of the following statement about Central Institute of Educational Technology (CIET) is/are not correct?

1. It is a constituent unit of the All India Council for Technical Education (AICTE).
2. Its aim is to promote utilization of educational technologies.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Central Institute of Educational Technology (CIET):

- It is a constituent unit of the National Council of Educational Research and Training (NCERT).
- It was established in 1984.
- Its aim is to promote utilization of educational technologies viz. radio, TV, films, Satellite communications and cyber media either separately or in combinations.

Source: EPIC July 2022

Q.10) “Global Liveability Index” is published by which of the following institutions?

- a) World Bank
- b) UNDESA
- c) Economist Intelligence Unit (EIU)
- d) World Economic Forum

ANS: C

Explanation: Global Liveability Index:

- It is published by the Economist Intelligence Unit (EIU) annually. Its aim is to quantify the challenges presented to an individual's lifestyle in 173 cities.
- The index ranks the cities based on the categories: stability, healthcare, culture and environment, education and infrastructure.
- Austrian capital Vienna has topped the list of most liveable cities in the world. New Delhi has been ranked 112th on the list while Mumbai is ranked at 117th position.

Source: EPIC July 2022

Science

Q.1) Consider the following statements about ARYABHAT-1:

1. It stands for Analog Reconfigurable Technology and Bias-scalable Hardware for AI Tasks.
2. It allows Artificial Intelligence (AI) and Machine Learning apps to perform much better and faster.

Which of the statements given above is/are correct?

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- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: ARYABHAT-1:

- Researchers at the Indian Institute of Science have developed an analogue chipset called ARYABHAT-1.
- It stands for Analog Reconfigurable Technology and Bias-scalable Hardware for AI Tasks.
- It will allow Artificial Intelligence (AI) and Machine Learning apps to perform much better and faster. It is useful for AI-based applications which deal with object or speech recognition systems, like Alexa or Siri.
- They are also very useful in operations that require massive parallel computing at high speeds.

Source: EPIC July 2022

Q.2) CAPSTONE, a microwave oven-sized CubeSat, recently seen in news is launched by which of the following organisations?

- a) ISRO
- b) NASA
- c) JAXA
- d) Both (b) and (c)

ANS: B

Explanation: CAPSTONE:

- NASA has launched CAPSTONE, a microwave oven-sized CubeSat weighing just 25 kg.
- It stands for Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE).
- Its aim is to help reduce risk for future spacecraft by validating innovative navigation technologies and by verifying the dynamics of the halo-shaped orbit.
- At the Moon, CAPSTONE will enter NRHO, where it will fly within 1,600 km of the Moon's North Pole on its near pass and 70,000 km from the South Pole at its farthest.
- The spacecraft will repeat the cycle every six-and-a-half days and maintain this orbit for at least six months to study dynamics. The study will provide useful insights for Gateway mission.

Source: EPIC July 2022

Q.3) Consider the following statements about Halo Orbit:

1. These are influenced by the gravity of two bodies.
2. These orbits are highly unstable, maximising the amount of propellant needed to keep a spacecraft circling the moon.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Halo Orbit:

- Halo orbits are those influenced by the gravity of two bodies like in Gateway's case, the Earth and the moon.
- The influence of two bodies helps make the orbit highly stable, minimizing the amount of propellant needed to keep a spacecraft circling the moon.

Source: EPIC July 2022

Q.4) "Gateway, which is a small space station around the moon", is a major component of which of the following?

- a) Chandrayaan 2
- b) China's Tiangong
- c) ROSCOSMOS's Luna 25
- d) NASA's Artemis Mission

ANS: D

Explanation: Gateway:

- Gateway is a major component of NASA's Artemis Mission. Gateway is a small space station around the moon.
- That would make it easier for astronauts to reach more parts of the moon.
- This outpost is to be placed in what is known as a Near-Rectilinear Halo Orbit (NRHO).

Source: EPIC July 2022

Q.5) Consider the following statements about India's GSAT-24 satellite:

1. It has been placed into the geostationary orbit by ISRO.
2. GSAT-24 is a 24-Ku band communication satellite.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: GSAT-24:

- India's GSAT-24 satellite was successfully placed into the geostationary orbit by French agency Ariane space.
- GSAT-24 is a 24-Ku band communication satellite. The satellite will provide high-quality television, broadcasting and telecommunications services.
- GSAT-24 has been built by ISRO for New Space India Limited (NSIL). It weighs ~4200 kg.
- It is the first 'demand-driven' communication satellite mission undertaken by NSIL post space sector reforms. NSIL has leased the entire satellite capacity to Tata Play.

Source: EPIC July 2022

Q.6) Consider the following statements about Electromagnetic Aircraft Launch System (EMALS):

1. It is a catapult system which helps to provide the extra push to aircraft.

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2. It has been first developed by North Korea.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Electromagnetic Aircraft Launch System (EMALS):

- It is a catapult system which helps to provide the extra push to aircraft.
- Once the catapult is released, the aircraft attached to the catapult moves forward with great speed in a short time, which helps it to gain the speed required to take-off before it reaches the end of the runway of the aircraft carrier.
- Electromagnetic Aircraft Launch System (EMALS) was first developed by the U.S. Navy.

Source: EPIC July 2022

Q.7) Fujian, Shandong and Liaoning, recently seen in news are types of:

- a) Supercomputer
- b) Missiles
- c) Aircraft Carrier
- d) Parts of Space station

ANS: C

Explanation: Fujian Aircraft Carrier:

- Fujian is China's first 'fully domestically developed and constructed' aircraft carrier. It has been named after China's eastern coastal province which lies across from Taiwan.
- It joins two other carriers currently operated by China: Shandong, commissioned in 2019 and the Liaoning, bought second-hand from Ukraine in 1998.
- The Fujian's displacement is 80,000 tonnes, much more than the existing Chinese carriers, and comparable to the U.S. Navy aircraft carriers.
- It also has the latest launch technology — the Electromagnetic Aircraft Launch System (EMALS), first developed by the U.S. Navy.

Source: EPIC July 2022

Q.8) Consider the following statements about Cervavac:

- 1. Cervavac is India's first quadrivalent human papillomavirus vaccine (qHPV) vaccine.
- 2. It is intended to protect women against breast cancer.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

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Explanation: About Cervavac:

- Cervavac is India's first quadrivalent human papillomavirus vaccine (qHPV) vaccine. It is intended to protect women against cervical cancer.
- The vaccine is based on VLP (virus-like particles), similar to the hepatitis B vaccine and provides protection by generating antibodies against the HPV virus's L1 protein.
- The approval of this vaccine will allow the government to procure enough HPV vaccines at a special price to vaccinate nearly 50 million girls aged 9–14 years in India who are waiting to receive the vaccine.
- This will be a huge step to accelerate cervical cancer elimination in India and globally.

Source: EPIC July 2022

Q.9) Large Hadron Collider is located at which of the following places?

- a) Russia
- b) Canada
- c) Switzerland
- d) Brazil

ANS: C

Explanation: About the Large Hadron Collider:

- The Large Hadron Collider is a giant, complex machine built to study particles that are the smallest known building blocks of all things.
- It is a 27-km-long track-loop buried 100 meters underground on the Swiss-French border.
- It has been built by the European Organization for Nuclear Research (CERN) between 1998 and 2008 in collaboration with over 10,000 scientists from hundreds of universities and laboratories.
- It is the world's largest and most powerful particle accelerator.

Source: EPIC July 2022

Q.10) A report titled 'Harnessing Green Hydrogen: Opportunities for Deep Decarbonisation in India' has been released by which of the following?

- a) NITI Aayog
- b) Ministry of Environment, Forest and Climate Change
- c) Ministry of New and Renewable Energy
- d) None

ANS: A

Explanation: NITI Aayog has released a report titled 'Harnessing Green Hydrogen: Opportunities for Deep Decarbonisation in India'.

About Green Hydrogen

- Green hydrogen is hydrogen gas produced through the electrolysis of water using renewable power.
- Electrolysis is an energy intensive process for splitting water into hydrogen and oxygen.

Demand for Green Hydrogen

- The report predicted that hydrogen demand in India could grow more than 4-fold by 2050, representing almost 10% of global hydrogen demand.
- In the longer term, steel and heavy-duty trucking are likely to drive the majority of demand growth, accounting for almost 52% of total demand by 2050.

Benefits of Adoption of Green Hydrogen

- Adoption of green hydrogen will result in 3.6 giga tonnes of cumulative CO2 emissions reductions between 2020 and 2050.
- Energy import savings from green hydrogen can range from US\$ 246 billion to US\$ 358 billion within the same period.
- Beyond the financial savings, the energy security that green hydrogen provides will translate to less volatile price inputs for India's industries as well as strengthen India's foreign exchange situation in the long run.

Source: EPIC July 2022

Indian Economy

Q.1) Consider the following statements about Net National Product (NNP):

1. It is the total money value of final goods and services produced in the economy during a year after deducting depreciation and net income from abroad.
2. It is always lower than NDP.
3. NNP is expressed in the currency of the nation it represents.

Which of the above given statement is/are correct?

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- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3

ANS: A

Explanation: Net national product (NNP) is the market value of a nation's goods and services (GNP) minus depreciation (often referred to as capital consumption).

The formula for NNP is:

- $NNP = \text{Market Value of Finished Goods} + \text{Market Value of Finished Services} - \text{Depreciation}$
- Alternatively, NNP can be calculated as:
- $NNP = \text{Gross National Product} - \text{Depreciation}$
- It can also be found out by adding the NFIA (National Factor Income from Abroad) to the NDP. If the NFIA is positive, that is, the inflow of factor income from abroad is more than the outflow;
- NNP will be more than NDP. Conversely, if NFIA is negative, NNP will be less than NDP and it would be equal to NDP in case the NFIA is zero.
- NNP provides an expression of the net value of the goods and services a nation has produced during a specific time, often examined on an annual basis as a way to measure a nation's success in continuing minimum production standards.
- The NNP is expressed in the currency of the nation it represents.

Source: NCERT

Q.2) Which of the following would be the effect of increase in Bank Rate?

- a) It increases the cost of borrowing by commercial banks.
- b) It increases the supply of money.
- c) It shows tightening of RBI monetary policy.
- d) Both (a) and (c)

ANS: D

Explanation: Bank Rate:

- Bank Rate refers to the official interest rate at which Central Bank (RBI) will provide loans to the banking system which includes commercial / cooperative banks, development banks etc.
- Central Bank buys or rediscounts bills of exchange or other commercial papers at Bank Rate. It also signals the medium-term stance of monetary policy.
- Bank rate is used as a signal by the RBI to the commercial banks on RBI's thinking of what the interest rates should be. When bank rate is raised, it is expected that all interest rates will move together in the same direction.
- It also decreases the money supply in market.

Difference between Bank Rate and Repo Rate:

- Bank Rate and Repo Rate seem to be similar terms because in both of them RBI lends to the banks.
- However, Repo Rate is a short-term measure and it refers to short-term loans and used for controlling the amount of money in the market.

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- On the other hand, Bank Rate is a long-term measure and is governed by the long-term monetary policies of the RBI.

Source: Ramesh Singh

Q.3) Consider the following pairs about types of inflation and their meanings:

1. Creeping Inflation: A kind of mild inflation that boosts demand.
2. Trotting Inflation: When inflation rises to 10 percent or more.
3. Core Inflation: It measures rising prices in everything including food and energy.
4. Disinflation: It is opposite of inflation in which the prices fall.

Select the correct answer using the codes given below:

- a) One Pair only
- b) Two Pair only
- c) Three Pair only
- d) All four Pairs

ANS: B

Explanation: Inflation means a sustained increase in the general price level. However, this increase in the cost of living can be caused by different factors.

- Creeping or mild inflation is when prices rise 3 percent a year or less.
- Trotting Inflation is when inflation rises to 10 percent or more.
- Core inflation reflects the long-term trend in a particular price level. It is a measure of inflation that excludes certain items that face volatile price movements (like food and energy) because in finding out the legitimate long run inflation, short-term price volatility and transitory changes in price must be removed
- Disinflation is a reduction in rate of inflation whereas DEFLATION is fall in prices (opposite of inflation).

Source: Indian Economy by Sankarganesh Karupiah

Q.4) Which of the following best represents the functions of RBI?

1. RBI has the sole autonomy to print notes and mint Rs 1 coins.
2. RBI policy of sterilization helps in stabilizing exchange rates.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: RBI was established in 1935 under the provisions of RBI Act, 1934.

RBI has seven major functions:

- Print Notes: RBI has the sole autonomy to print notes. Government of India has the sole authority to mint coins and one rupee notes NOT RBI.
- Banker to the Government: It manages government's deposit accounts. It also represents govt. as a member of the IMF and World Bank.
- Custodian of Commercial Bank Deposits
- Custodian to Country's Foreign Currency Reserves

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- Lender of Last Resort: Commercial banks come to RBI for their monetary needs in case of emergency.
- Central Clearance and Accounts Settlement: As RBI keeps cash reserves from commercial banks therefore it rediscounts their bills of exchange easily.
- Credit Control: It controls supply of money in the economy through its monetary policy
 - The Banking Regulation Act 1949 gives the Reserve Bank of India (RBI) the power to license banks, have regulation over shareholding and voting rights of shareholders;
 - supervise the appointment of the boards and management;
 - regulate the operations of banks; lay down instructions for audits;
 - control moratorium, mergers and liquidation;
 - issue directives in the interests of public good and on banking policy, and impose penalties.
 - Sterilization process is used to manipulate the value of one domestic currency relative to another in foreign exchange market.

Source: PIB

Q.5) Which of the following does not represents the recommendations of the Narashimhan Committee?

1. SLR and CRR should be increased over the period of time.
2. The banks should be allowed to set the interest rates for their customers thus deregulating interest rates.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: In August 1991, Government of India appointed a high level committee under the Chairmanship of Shri M. Narasimham to examine all aspects relating to the structure organisation, functions and procedures of the financial system.

The main recommendations of the committee are as follows:

- The Narasimham Committee recommended that SLR should be reduced to 25% over the period of 5 years and CRR should be reduced to 10% over the period of time.
- It redefined the priority sector to include the marginal farmers, tiny sector, small business and transport sector, village and cottage industries etc.
- The committee recommended deregulation of the Interest Rates, so that banks can themselves set the interest rates for their customers.
- It also recommended setting up tribunals for recovery of Loans, tackling doubtful debts, restructuring the banks and allowing entry of the new private Banks.

Source: Ramesh Singh

Q.6) Consider the following statements about GDP:

1. GDP is the measure of welfare or happiness.
2. GDP is the measure of Disposable Personal Income.

Which of the statements given above is/are correct?

- a) 1 only

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- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: GDP stands for gross domestic product and represents the total production of a nation within its domestic borders. But the rise in GDP doesn't guarantee the welfare of the masses.

- This is because the rise in GDP may be concentrated in the hands of very few individuals or firms. For the rest, the income may in fact have fallen. In such a case the welfare of the entire country cannot be said to have increased.
- Disposable income, also known as disposable personal income (DPI), is the amount of money that households have available for spending and saving after deduction of income taxes.
- Disposable Income = Personal Income - Personal Income Taxes Payments

Source: Indian Economy by Sankarganesh Karuppiah

Q.7) NPCI has been set up as an umbrella organization owned and operated by the banks. Which of the following payment systems has been authorized by Reserve Bank of India under NPCI?

1. Immediate Payment System
2. Aadhaar Enabled Payments System
3. Operation of Cheque Truncation System

Select the correct answer using the codes given below:

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3

ANS: D

Explanation: NPCI has been set up as an umbrella organization owned and operated by the banks. NPCI has been authorised by Reserve Bank of India under the PSS Act, 2007 to operate the following Payment Systems:

- National Financial Switch (NFS).
- Immediate Payment System (IMPS).
- Affiliation of RuPay Cards (debit cards/ prepaid cards) issued by banks and co-branded credit cards issued by non-banking financial companies (NBFCs) or any other entity approved by the RBI.
- National Automatic Clearing House (ACH).
- Aadhaar Enabled Payments System (AEPS).
- Operation of Cheque Truncation System.

Source: <https://www.npci.org.in/>

Q.8) Which of the following characteristic feature of different money market instruments is/are not correctly matched?

1. T-Bills: The Treasury Bills are marketable, affordable and risk free.
2. Banker's Acceptance: Companies use these negotiable time drafts to finance imports, exports and other trade.
3. Commercial papers: These are time deposits that are issued by the commercial banks.

Select the correct answer using the codes given below:

- a) One Pair only
- b) Two Pair only
- c) All Three Pairs
- d) None

ANS: A

Explanation: The money market is the arena in which financial institutions make available to a broad range of borrowers and investors the opportunity to buy and sell various forms of short-term securities. There is no physical "money market", instead it is an informal network of banks and traders linked by telephones, fax machines, and computers.

Types of Money Market Instruments

- The Treasury bills are short-term money market instrument that mature in a year or less than that. The purchase price is less than the face value. At maturity the government pays the Treasury bill holder the full face value. The Treasury Bills are marketable, affordable and risk free. The security attached to the treasury bills comes at the cost of very low returns.
- Bankers Acceptance: It is a short-term credit investment. It is guaranteed by a bank to make payments. The Banker's Acceptance is traded in the Secondary market. The banker's acceptance is mostly used to finance exports, imports and other transactions in goods.
- Certificates of Deposits - The certificates of deposit are basically time deposits that are issued by the commercial banks with maturity periods ranging from 3 months to five years.
- Commercial Paper - Commercial paper refers to unsecured short-term promissory notes issued by financial and nonfinancial corporations.

Source: Indian Economy by Sankarganesh Karuppiah

Q.9) Promoting digital payments has been mandated to which of the following institution?

- a) Ministry of IT and Electronics (MeiTY)
- b) NITI Aayog
- c) NIC
- d) Ministry of Finance

ANS: A

Explanation:

- The responsibility to promote digital transactions in India has been shifted from NITI Aayog to the Ministry of IT and Electronics (MEITY).

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- By shifting the responsibility to promote digital transaction to MEITY, the government is trying to utilize the core competence of specific ministries.
- NITI Aayog would have a role to monitor and recommend ways to improve government schemes and growth of IT-enabled.

Source: <https://www.meity.gov.in/digidhan-mission>

Q.10) Which of the following pair is/are correctly matched?

1. Tarapore Committee - Capital Account Convertibility
2. Tendulkar Committee - Poverty Estimation
3. Urijit Patel Committee - Monetary Policy Reforms
4. Kelkar Committee - Revisiting & Revitalizing PPP

Select the correct answer using the codes given below:

- a) One Pair only
- b) Two Pair only
- c) Three Pair only
- d) All four Pairs

ANS: D

Explanation: Tarapore Committee: -

- In 1997, a committee on capital account convertibility was setup by the Reserve Bank of India (RBI) under the chairmanship of former RBI deputy governor S.S. Tarapore to "lay the road map" to capital account convertibility.
- Rangarajan Committee was also for poverty estimation. Bibek Debroy committee was for restructuring Indian Railways.
- Urijit Patel Committee was appointed to examine the current monetary policy framework of the Reserve Bank of India. It was headed by Urjit Patel, Deputy Governor of the Reserve Bank of India to strengthened Monetary Policy Framework of RBI
- Kelkar Committee was a committee set up to study and evaluate the extant public-private partnership (PPP) model in India.

Source: ForumIAS

Indian Polity

Q.1) How many Pairs in List I and List II are correctly matched?

List I

List II

- | | |
|---------------------|---|
| 1. Third Schedule | Forms of Oath or Affirmations |
| 2. Fourth Schedule | Allocation of seats in the Council of States |
| 3. Seventh Schedule | Languages |
| 4. Eighth Schedule | List of subject matter of laws to be made by the Parliament and by State Legislatures |

Select the correct answer using the codes given below:

- a) One Pair Only
- b) Two Pairs Only
- c) Three pairs only
- d) All Four Pairs

ANS: B

Explanation:

12 Schedules of Indian Constitution

Schedules	Details
Schedule 1	State and Union Territories Name and their Boundary details
Schedule 2	Special Powers and Salary details of President, Governors of state, Speakers and Deputy speakers of Rajiya sabha and Lok sabha, Supreme court and High Court Judges.
Schedule 3	Oath and Promises of All authority except President, and vice president.
Schedule 4	Rajiya Sabha MP count of state and Union Territories
Schedule 5	Scheduled Area and scheduled Tribes Administration and control Law Details
Schedule 6	States of Assam, Meghalaya, Tripura and Mizoram Tribal areas Administration and control law details
Schedule 7	Detailed List about Union and State Government Power and Concurrent List
Schedule 8	Official Languages
Schedule 9	Validation of certain Acts and Regulations.
Schedule 10	Details about Party changes and disqualification of MP/MLA
Schedule 11	Responsibilities and Powers of Panchayat
Schedule 12	Responsibilities and Powers of Municipalities

Source: Laxmikanth

Q.2) Which one of the following did NOT serve as Vice President before assuming the office of the President of India?

- a) Dr. Shankar Dayal Sharma
- b) Neelam Sanjiva Reddy
- c) Dr. Zakir Hussain
- d) R. Venkatraman

ANS: B

Explanation: Vice President:

- In India, Vice-President has the second-highest office in the country.
- Article 63 of the Indian Constitution mentions the post of Vice-President.
- There is no direct election for the Vice-President of India however, he/she is indirectly elected by an Electoral College.
- He acts as the ex-officio Chairman of Rajya Sabha.

Vice President	Term	Term of President
Sarvepalli Radhakrishnan	1952-1962	1962-1967
Zakir Hussain	1962-1967	1967-1969
V. V. Giri	1967-1969	1969-1974
Gopal Swarup Pathak	1969-1974	Not became president

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B. D. Jatti	1974-1979	Not became president
Mohammad Hidayatullah	1979-1984	1969 (Acting President)
R. Venkataraman	1984-1987	1987-1992
Shankar Dayal Sharma	1987-1992	1992-1997
K. R. Narayanan	1992-1997	1997-2002
Krishan Kant	1997-2002	Not became president
Bhairon Singh Shekhawat	2002-2007	Not became president
Mohammad Hamid Ansari	2007-2017	Not became president
Venkaiah Naidu	2017-Incumbent	Not became president

- From the table, it is clear that Neelam Sanjiva Reddy did NOT serve as Vice President before assuming the office of the President of India.
- The only unopposed President of India, Neelam Sanjiva Reddy became the President in 1977.
- He was elected on 21 July 1977 and was sworn in as the sixth President of India on 25 July 1977.
- Reddy worked with three governments, with Prime Ministers Morarji Desai, Charan Singh, and Indira Gandhi.
- He was also the first chief minister of Andhra Pradesh, credited with the architecture and modernization of the state.
- He participated in various freedom struggles against the British and was imprisoned several times.

Source: Laxmikanth

Q.3) The term “fourth estate” refers to which of the following?

- a) Executive
- b) Judiciary
- c) Parliament
- d) Press

ANS: D

Explanation: The Fourth Estate is a societal or political institution whose influence is not officially recognized and is most commonly referred to the news media, especially print journalism or "the press".

Conservative Anglo-Irish MP Edmund Burke coined the phrase as a way of mocking the gentlemen of the press. Edmund Burke first dubbed the press as the 'Fourth Estate'.

Source: <https://theconversation.com/right-to-know-the-nation-the-people-and-the-fourth-estate21253#:~:text=The%20media%20as%20the%20Fourth%20Estate&text=Conservative%20Anglo%2DIrish%20MP%20Edmund,as%20the%20'Fourth%20Estate'>.

Q.4) Which one of the following does not figure in the list of languages in the eighth schedule of constitution of India?

- a) Dogri

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- b) Bhoti
- c) Maithili
- d) Santhali

ANS: B

Explanation: Languages recognized by the Constitution. Originally, it had 14 languages but presently there are 22 languages. They are: Assamese, Bengali, Bodo, Dogri (Dongri), Gujarati, Hindi, Kannada, Kashmiri, Konkani, Mathili (Maithili), Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Santhali, Sindhi, Tamil, Telugu and Urdu. Sindhi was added by the 21st Amendment Act of 1967; Konkani, Manipuri and Nepali were added by the 71st Amendment Act of 1992; and Bodo, Dongri, Maithili and Santhali were added by the 92nd Amendment Act of 2003. Oriya was renamed as 'Odia' by the 96th Amendment Act of 2011.

Source: Laxmikanth

Q.5) Which one of the following statements about the National Green Tribunal is not correct?

- a) It was set up in the year 2010.
- b) It is involved in effective and expeditious disposal of cases relating to environmental protection and conservation of forests.
- c) It may consider giving relief and compensation for damages to persons and property.
- d) It is bound by the procedures laid down under the Code of Civil Procedure, 1908.

ANS: D

Explanation: National Green Tribunal (NGT):

- The National Green Tribunal was formed on 18 October 2010.
- It is a statutory body formed under the National Green Tribunal Act 2010. Hence, NGT is a statutory body.
- It is related to Article 21 of the Indian Constitution.
- This Tribunal has the same status as the High Court.
- Its headquarters is located in New Delhi.
- The main objective of the establishment of the National Green Tribunal is to speedy disposal of environmental issues to reduce the burden of pending litigations in the country's courts. Hence, NGT is a Quasi-Judicial Body.
- According to the National Green Tribunal Act, NGT must deal with the environmental issues faced by them within 6 months.
- There are at least 10 and a maximum of 20 full-time judicial members and expert members.
- Tenure: 5 years
- Not eligible for re-appointment.

Appointment:

- The Chairman is appointed by the Central Government after consulting the Chief Justice of India.
- A selection committee is formed by the central government to appoint judicial and expert members.
- Salary and Allowances are determined by the Central Government.
- Being a statutory body, the NGT has appellate jurisdiction and under which it can conduct hearings.

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• NGT is not obliged to follow the judicial process mentioned in Civil Procedure Code, 1908. There are four Regional Offices of the National Green Tribunal. These include:

- Bhopal
- Kolkata
- Chennai
- Pune

With the establishment of the National Green Tribunal, India has become the third country in the world to set up a special environmental tribunal after Australia and New Zealand.

Source: <https://greentribunal.gov.in/methodologyngt#:~:text=The%20National%20Green%20Tribunal%20Act,by%20principles%20of%20natural%20justice>

Q.6) The provision under Article 350A of the Constitution of India relates to the:

- a) Right of any section of the citizens to preserve its distinct language and culture
- b) Right of the Sikh community to carrying and wearing of kirpans
- c) Provision for providing facilities for instruction in mother-tongue at primary stage
- d) Freedom of Minority-managed educational institutions from discrimination in the matter of receiving aid from the State

ANS: C

Explanation: Article 350-A pertains to linguistic minorities.

- It imposes a duty on the states to Endeavour to provide adequate facilities for instruction in the mother tongue at the primary stage of education to children belonging to linguistic minorities.
- The president is authorized to issue such directions to any state, as he considers necessary or proper for securing the provisions of such facilities.

Article 29(1):

- It deals with the Rights of citizens to preserve their language, script, and culture.

Article 25

- It provides the right to the Sikh community to carrying and wearing of kirpans.

Article 30:

- It deals with the Right of minorities to establish and administer educational institutions.
- All minorities, whether based on religion or language, shall have the right to establish and administer educational institutions of their choice.

Source: Laxmikanth

Q.7) Under Article 344 of Indian Constitution, the first 'Official Language Commission' was established

- a) In 1950 under the Chairmanship of K.M. Munshi
- b) In 1955 under the Chairmanship of B.G. Kher
- c) In 1960 under the Chairmanship of M.C. Chagala
- d) In 1965 under the Chairmanship of Humayun Kabir

ANS: B

Explanation: The Official Language Commission, 1955

The President, by using the powers conferred under the Article 344 (I) of the Constitution, appointed a Commission on 7th June, 1955 under the Chairmanship of Shri Bal Gangadhar Kher for making recommendations.

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Source: <https://rajbhasha.gov.in/sites/default/files/cpolreport9-chapter1eng.pdf>

Q.8) Which Article of the Constitution provides that every state shall endeavour to provide an adequate facility for instruction in mother tongue at primary stage of education?

- a) Article 349
- b) Article 350
- c) Article 350A
- d) Article 351

ANS: C

Explanation: Official Language

- 343. Official language of the Union
- 344. Commission and committee of Parliament on official language
- 345. Official language or languages of a state
- 346. Official languages for communication between one state and another or between a state and the Union.
- 347. Special provision relating to language spoken by a section of the population of a state
- 348. Language to be used in the Supreme Court and in the high courts and for acts, bills, etc.
- 349. Special procedure for enactment of certain laws relating to language
- 350. Language to be used in representations for redress of grievances
- 350A. Facilities for instruction in mother-tongue at primary stage
- 350B. Special officer for linguistic minorities
- 351. Directive for development of the hindi language

Source: Laxmikanth

Q.9) Under which one of the following Constitutional Amendment Acts, four languages were added to the languages under the Eighth Schedule of the Constitution. Thereby raising their number to 22?

- a) Constitution (90th Amendment) Act
- b) Constitution (91st Amendment) Act
- c) Constitution (92nd Amendment) Act
- d) Constitution (93rd Amendment) Act

ANS: C

Explanation: Ninety-Second Amendment Act, 2003

It included four more languages in the Eighth Schedule. They are Bodo, Dogri (Dongri), Mathilli (Maithili) and Santhali. With this, the total number of constitutionally recognised languages increased to 22.

Source: Laxmikanth

Q.10) Constitutional status and protection has been awarded to co-operative societies which led to changes in which of the following sections of the constitution?

- 1. Fundamental Rights
- 2. DPSPs
- 3. Fundamental Duties
- 4. A new part was added in constitution

Select the correct answer using the codes given below:

- a) 1 and 3 Only
- b) 1, 2 and 3 Only
- c) 1, 2 and 4 Only
- d) All of the above

ANS: C

Explanation: The 97th Constitutional Amendment Act of 2011 gave a constitutional status and protection to co-operative societies.

This changed the following sections of the constitution –

- It made the right to form co-operative societies a fundamental right (Article 19).
- It added the words "or co-operative societies" after the word "or unions" in Article 19 (1) (c).
- It included a new Directive Principle of State Policy on promotion of co-operative societies (Article 43-B).
- It added a new Part IX-B in the Constitution which is entitled 'The Co-operative Societies' (Articles 243-ZH to 243-ZT).

The amendment objective is to encourage economic activities of co-operatives. This will help in progress of rural India.

Article 43 B states that there should efforts of state to promote voluntary formation, autonomous functioning, democratic control and professional management of co-operative societies.

Incorporation of Co-operative Societies - The state legislature may make provisions for the incorporation, regulation and winding-up of co-operative societies based on the principles of voluntary formation, democratic member-control, member-economic participation and autonomous functioning.

Number and Term of Members of Board and its Office Bearers –

- The board shall consist of such number of directors as may be provided by the State Legislature.
- But, the maximum number of directors of a co-operative society shall not exceed 21.
- The State Legislature shall provide for the reservation of one seat for the Scheduled Castes or the Scheduled Tribes and two seats for women on the board of every co-operative society having members from such a category of persons.
- The term of office of elected members of the board and its office bearers shall be five years from the date of election.
- The State Legislature shall make provisions for co-option of persons having experience in the field of banking, management, finance or specialization in any other related field, as members of the board.
- But, the number of such co-opted members shall not exceed two (in addition to 21 directors).
- Also, the co-opted members shall not have the right to vote in any election of the co-operative society or be eligible to be elected as office bearers of the board.
- The functional directors of a co-operative society shall also be the members of the board and such members shall be excluded for the purpose of counting the total number of directors (that is, 21).

Source: Laxmikanth

Geography

Q.1) “Bailadila Iron ore mine” is located in which of the following state?

- a) Bihar
- b) Karnataka
- c) Chhattisgarh
- d) Odisha

ANS: C

Explanation:

- Durg-Bastar-Chandrapur belt lies in Chhattisgarh and Maharashtra. Very high grade hematites are found in the famous Bailadila range of hills in the Bastar district of Chattisgarh.
- The range of hills comprises of 14 deposits of super high grade hematite iron ore. It has the best physical properties needed for steel making. Iron ore from these mines is exported to Japan and South Korea via Vishakhapatnam port.

Source: NCERT

Q.2) Consider the following statements with respect to Copper mineral in India:

1. India is critically deficient in the reserve and production of copper

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2. The Balaghat mines in Maharashtra produce more than 50% per cent of India's copper
3. The Khetri mines in Rajasthan are also famous for copper ores

Which of the following codes below given is/are correct?

- a) 1 only
- b) 1 and 3 only
- c) 2 only
- d) 2 and 3 only

ANS: B

Explanation:

- India is critically deficient in the reserve and production of copper. Being malleable, ductile and a good conductor, copper is mainly used in electrical cables, electronics and chemical industries.
- The Balaghat mines in Madhya Pradesh produce 52 per cent of India's copper. The Singbhum district of Jharkhand is also a leading producer of copper. The Khetri mines in Rajasthan are also famous.

Source: NCERT

Q.3) Consider the following statements with respect to mica:

1. Properties of mica is excellent di-electric strength and low power loss factor
2. Koderma Gaya-Hazaribagh belt of Jharkhand is the leading producer of mica

Which of the following above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Mica:

- Mica is a mineral made up of a series of plates or leaves. It splits easily into thin sheets. These sheets can be so thin that a thousand can be layered into a mica sheet of a few centimeters high. Mica can be clear, black, green, red yellow or brown.
- Due to its excellent di-electric strength, low power loss factor, insulating properties and resistance to high voltage, mica is one of the most indispensable minerals used in electric and electronic industries.
- Mica deposits are found in the northern edge of the Chota Nagpur plateau. Koderma Gaya – Hazaribagh belt of Jharkhand is the leading producer. In Rajasthan, the major mica producing area is around Ajmer. Nellore mica belt of Andhra Pradesh is also an important producer in the country.

Source: NCERT

Q.4) Consider the following statements Agro-based industries in India:

1. The first successful textile mill was established in Gujarat in 1854
2. The first jute mill was set up near Kolkata in 1859

Which of the following codes below given is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Agro-based industries in India

- In ancient India, cotton textiles were produced with hand spinning and handloom weaving techniques. After the 18th century, power-looms came into use.
- Our traditional industries suffered a setback during the colonial period because they could not compete with the mill-made cloth from England.
- The first successful textile mill was established in Mumbai in 1854.
- The two world wars were fought in Europe, India was a British colony. There was a demand for cloth in U.K. hence; they gave a boost to the development of the cotton textile industry.
- The first jute mill was set up near Kolkata in 1859 at Rishra. After Partition in 1947, the jute mills remained in India but three-fourth of the jute producing area went to Bangladesh (erstwhile East Pakistan).

Source: NCERT

Q.5) Consider the following elements of the earth's crust:

1. Oxygen
2. Silicon
3. Aluminum
4. Iron

Which of the following code is correct ascending order of elements of the earth's crust?

- a) 1-2-3-4
- b) 2-3-4-1
- c) 4-3-2-1
- d) 3-2-4-1

ANS: C

Explanation:

- The earth is composed of various kinds of elements. These elements are in solid form in the outer layer of the earth and in hot and molten form in the interior.
- About 98 per cent of the total crust of the earth is composed of eight elements like oxygen, silicon, aluminium, iron, calcium, sodium, potassium and magnesium and the rest is constituted by titanium, hydrogen, phosphorous, manganese, sulphur, carbon, nickel and other elements.
- The Major Elements of the Earth's Crust Elements By Weight (%):
 - Oxygen- 46.60
 - Silicon- 27.72

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- Aluminum- 8.13
- Iron- 5.00
- Calcium- 3.63
- Sodium- 2.83
- Potassium- 2.59
- Magnesium- 2.09
- Others- 1.41

Source: GC Leong

Q.6) Which of the following fossil fuel is called as “Buried Sunshine”?

- a) Crude oil
- b) Natural gas
- c) Coal
- d) Mica

ANS: C

Explanation:

- Coal is the most abundantly found fossil fuel. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity.
- Electricity from coal is called thermal power. The coal which we are using today was formed millions of years ago when giant ferns and swamps got buried under the layers of earth. Coal is therefore referred to as Buried Sunshine.

Q.7) Consider the following statements about Coal in India:

1. Anthracite Coal is only found in the state of Jammu and Kashmir.
2. Largest reserves of coal are in the state of Chhattisgarh.
3. Talcher coalfields are in the state of Jharkhand.

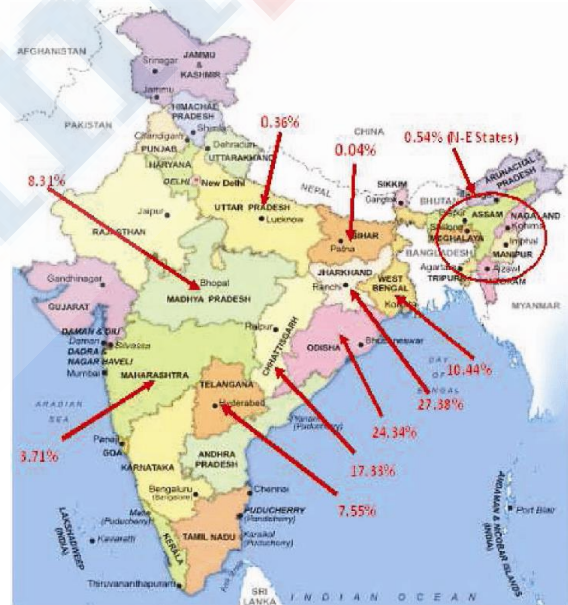
Which of the above given statement is/are not correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation:

- Top 5 States in terms of total coal reserves in India are: Jharkhand > Odisha > Chhattisgarh > West Bengal > Madhya Pradesh. On the basis of carbon content it can be classified into following three types:



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- Anthracite: It is the best quality of coal with highest calorific value and carries 80 to 95% carbon content. It ignites slowly with a blue flame and found in small quantities in Jammu and Kashmir.
- Bituminous: It has a low level of moisture content with 60 to 80% of carbon content and has a high calorific value. Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh have deposits of Bituminous.
- Lignite carries 40 to 55% carbon content and is often brown in colour with high moisture content thus, gives smoke when burnt. Rajasthan, Lakhimpur (Assam) and Tamil Nadu has deposits of Lignite.
- Peat is the first stage of transformation from wood to coal with low calorific value and less than 40% carbon content.

Coal reserves are widely distributed across India

- The Damodar Valley Coalfield- It is the largest coal reserve in India. The coalfield area includes the states of Jharkhand and West Bengal. Jharia of Jharkhand is the largest coalfield of India. Most of the coking coal in India is obtained from here. Other coalfields in Jharkhand are Jayanti, Bokaro, Karanpura, Ramgarh, Giridh, Auranga, Hutar, Deltenganj and Deogarh. Major coalfields in West Bengal are Raniganj (oldest coalfield of India) and Dalingkot in Darjeeling district.
- The Son Valley Coalfield- The region of Madhya Pradesh and some areas of Uttar Pradesh are included in it. Prominent coalfields in the Son Valley are Singrauli, Sohagpur, Umaria, Pench, Ramkola and Tatapani.
- The Mahanadi Valley Coalfield- The areas of Chhattisgarh and Odisha are included in it. Major coal mining areas in Chhattisgarh are Korba, Jhilmil, Chirmiri, Vishrampur, Lakhanpur, Sonhat, Birampur and Sonhat. Talcher, Rampur-Himgir and Ib river coalfield is the prominent coalfields in Odisha.
- The Godavari Valley Coalfield- The region is in the states of Andhra Pradesh and Telangana. Major coalfields in the region are Singreni, Tandoor and Sasti.
- The Wardha Valley Coalfield- Kampti, Wunfield, Chandrapur, Yavatmal, Nagpur are major coal mining areas located in Maharashtra.
- The Satpura Coalfield- The region is in the Satpura range, south of the Narmada river. Major coal mining centres are Ghorbari, Mahapani and Patharkheda.
- The Rajmahal Coalfield- Major coal-mining centre in the Rajmahal range is Lalmatia where open-cast mining is practised.

Source: NCERT

Q.8) Consider the following statements about coal:

1. Anthracite coal is the best quality of coal.
2. 98% of India's total coal is found in Gondwana rocks of Moran region.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: There are four types of coal found in India:

- Anthracite (Best quality of coal found only in Jammu & Kashmir);

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- Bituminous (Second best quality of coal);
- Lignite (Found in Tamil Nadu, Rajasthan, Gujarat and Jammu & Kashmir)
- Peat (first stage of formation of coal. It has high carbon content.)
- Coal accounts for approx. 67 % of total commercial energy produced in India and 98% of India's total account is found in Gondwana rocks of Moran region.
- The main regions of Gondwana rocks are found in West Bengal, Jharkhand and Odisha. The first effort made to extract coal with modern technology in India was at Ranigunj coal region in West Bengal.

Source: NCERT

Q.9) Which of the following pair of coalfields and the state is correctly matched?

State	Coalfields
1. Jharkhand	Jharia
2. Chattisgarh	Talcher
3. Madhya Pradesh	Singrauli

Select the correct answer from given below codes:

- One Pair only
- Two Pair only
- All Three pairs
- None

ANS: B

Explanation:

- India is one of the richest countries in mineral resources in the world.
- Since India's internal structure of earth is the product of ancient hard rock's therefore all types of mineral are found here. Gondwana rocks (Chhota Nagpur Plateau) are the richest mineral deposits in India. The table given below lists major coal fields:

State	Coal Field
West Bengal	Ranigunj (Oldest coal field in India)
Jharkhand	Jharia (Largest), Bokaro, Dhanbad, Giridih, Karanpura, Ramgarh, Daltonganj
Madhya Pradesh	Singrauli, Suhagpur, Johila, Umaria, Satpura coalfield
Odisha	Talcher, Himgiri, Rampur
Andhra Pradesh	Kantapalli, Singareni
Chhattisgarh	Korba, Bistrampur, Sonhat, Jhilmil, Hasdo-Arand
Assam	Makum, Najira, Janji, Jaipur
Meghalaya	Umralong, Darrangiri, Cherrapunji, Mawlong, Langrin
Arunachal Pradesh	Naqmchik-Namphuk

Source: NCERT

Q.10) In which of the following rocks are coal and petroleum found?

- a) Sedimentary
- b) Igneous
- c) Metamorphic
- d) All of the above

ANS: A

Explanation:

- Sedimentary rocks are made due to weathering, erosion and deposition of sediments of igneous and metamorphic rocks.
- These rocks are layered rocks, so fossils are found in these type of rocks. Heat and pressure can convert the fossils of animals into petroleum and trees and plants convert into coal.
- The fossil fuel that we use is very old. We are mostly using coal and petroleum formed before 30 crore years ago in Carboniferous Period of Palaeozoic Era.

Source: NCERT

Ecology and Environment

Q.1) Which of the following convention provides the mechanisms to develop the International Standards for Phytosanitary Measures (ISPMs), and to help countries to implement the ISPMs?

- a) Convention on Biological Diversity
- b) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- c) World Heritage Convention (WHC)
- d) International Plant Protection Convention (IPPC)

ANS: D

Explanation: International Plant Protection Convention (IPPC)

- The International Plant Protection Convention (IPPC) aims to protect world plant resources, including cultivated and wild plants by preventing the introduction and spread of plant pests and promoting the appropriate measures for their control.
- The convention provides the mechanisms to develop the International Standards for Phytosanitary Measures (ISPMs), and to help countries to implement the ISPMs and the other obligations under the IPPC, by facilitating the national capacity development, national reporting and dispute settlement.
- The Secretariat of the IPPC is hosted by the Food and Agriculture Organization of the United Nations (FAO).

Source: <https://www.ippc.int/en/structure/>

Q.2) Which of the following is/are “pioneer species” of ecological succession?

1. Lichens
2. Fungi
3. Bacteria

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation:

- Ecological succession is a series of progressive changes in the species that make up a community over time.
- Primary succession occurs when new land is formed or bare rock is exposed, providing a habitat that can be colonized for the first time.

What happens to this land during primary succession?

- First, weathering and other natural forces break down the substrate, rock, enough for the establishment of certain hearty plants and lichens with few soil requirements, known as pioneer species. Algae, fungi, bacteria, lichens colonize on the bare rocks and provide organic materials for further higher level of colonization, while the planktons i.e., phytoplankton's, zooplanktons provide base at the shallow water for further higher levels of succession in hydro sere.

Source: <https://eco-intelligent.com/2016/11/22/ecological-succession-who-starts-it-pioneer-species/>

Q.3) “Global Drylands Initiative” is launched by which of the following?

- a) UNEP
- b) Global Environment Facility
- c) World Bank
- d) IUCN

ANS: D

Explanation: Global Drylands Initiative:

- Drylands are found in tropical and temperate latitudes and account for 41.3% of the global terrestrial area.
- They can be classified into four types - dry sub-humid, semi-arid, arid and hyper-arid lands - encompassing a variety of ecosystems.
- The goal of the Global Drylands Initiative is to restore, sustainably manage and protect dryland ecosystems for multiple environmental, economic and social benefits.
- The Initiative supports countries to adapt ecosystem management policy and practice to the unique conditions of the drylands and to the evolving challenges that the drylands face.
- Further, as the IUCN Focal Point to the United Nations Convention to Combat Desertification, the Global Drylands Initiative leads IUCN's efforts to influence the global discourse on Land Degradation and Sustainable Land Management.

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- In this case, the Initiative supports countries to implement their commitments to the Convention by demonstrating good practices on the ground, influencing the science-policy interaction of the Convention itself and working with other stakeholders to achieve Land Degradation Neutrality.

Source: <https://www.iucn.org/our-work/topic/drylands-and-land-degradation/global-drylands-initiative-strategic-priorities>

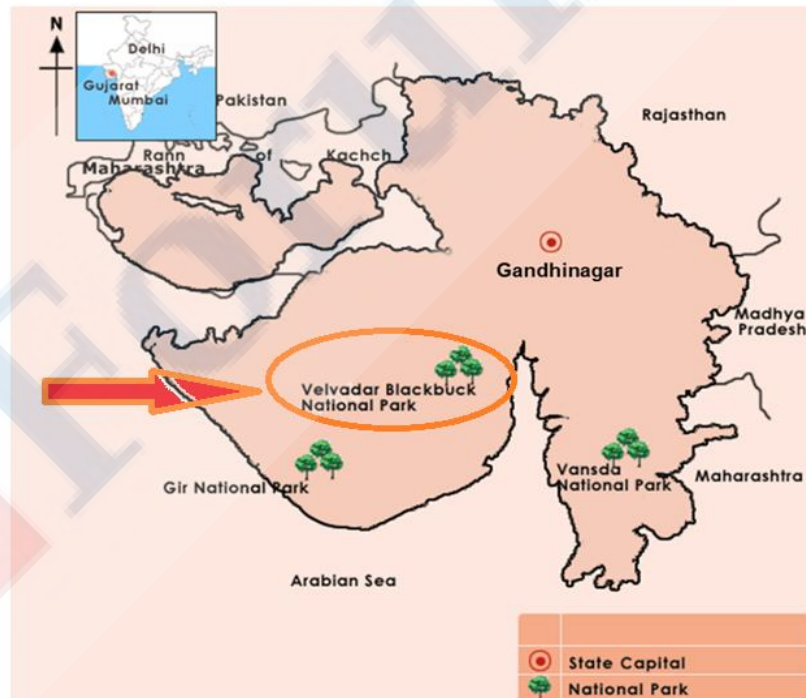
Q.4) “Velavadar National Park” is located in which of the following state?

- a) Maharashtra
- b) Rajasthan
- c) Gujarat
- d) Madhya Pradesh

ANS: C

Explanation:

- Velavadar is situated in the Bhal region of Saurashtra in Gujarat. It is a unique grassland ecosystem and perhaps the only tropical grasslands in India to be deemed a National Park.
- It is most renowned for its enchanting blackbuck population. The elegant blackbuck is endemic to India and Velavadar is one of its prime home territories.
- Wolves are the main predators of blackbuck in the park. It is highly recommended for any birdwatcher, with several birds like the Lesser Florican visiting the area. Besides, Velavadar has also earned fame as the world’s largest roosting site of the harrier.



Source: The Hindu

Q.5) Energy Efficiency Services Limited (EESL) leads the market-related activities under the Prime Minister’s National Action Plan on Climate Change. Which of the following public-sector agencies established the EESL?

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1. NTPC Limited.
2. Power Finance Corporation Limited.
3. Rural Electrification Corporation Limited.
4. Solar Energy Corporation of India.

Select the correct answer using the codes given below:

- a) 1, 2 and 4 only
- b) 1, 2 and 3 only
- c) 2, 3 and 4 only
- d) 1, 2, 3 and 4

ANS: B

- Explanation: Energy Efficiency Services Limited (EESL) is a joint venture of four national Public-Sector Undertakings – NTPC Limited, Power Finance Corporation Limited, Rural Electrification Corporation Limited and POWERGRID Corporation of India Limited.
- As South Asia's first and foremost energy efficiency leader, EESL leads the market-related activities of the National Mission for Enhanced Energy Efficiency (NMEEE), one of the eight national missions under the Prime Minister's National Action Plan on Climate Change.

Source: <https://eeslindia.org/en/about-us/>

Q.6) Consider the following statements with respect to “Sambar deer”:

1. It is found in India and other parts of Asia only.
2. Sambar deer inhabit tropical rainforests, evergreen and mixed forests.

Which of the following codes below given is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation:

- Sambar deer is one of the largest members of deer family. There are 7 subspecies of sambar deer that originate from southern and southeastern parts of Asia (Sri Lanka, Nepal, China, Cambodia and Thailand).
- They can be found all over Australia, New Zealand and North America today. Sambar deer inhabit tropical rainforests, evergreen and mixed forests.
- They live in habitats that provide enough water. Sambar deer are often on a target of hunters because of their beautiful antlers and meat.
- Also, different parts of their body are used in traditional Asian medicine. Habitat loss (as a result of deforestation) additionally decreases number of sambar deer in the wild. These animals are listed as vulnerable (may become endangered in the near future).

Source: ForumIAS

Q.7) Which of the following institution publishes the Climate Change Performance Index?

- a) UNESCO
- b) World Bank
- c) Germanwatch

d) UNDP

ANS: C

Explanation:

- The Climate Change Performance Index published by Germanwatch, CAN International and the NewClimate Institute evaluates and compares the climate protection performance of 56 countries and the EU.
- The Climate Change Performance Index is an independent monitoring tool of countries' climate protection performance. It aims to enhance transparency in international climate politics and enables the comparability of climate protection efforts and progress made by individual countries.
- On the basis of standardised criteria, the index evaluates and compares the climate protection performance of 56 countries and the EU that are, together, responsible for nearly 90 percent of global greenhouse gas emissions.

Source: The Hindu

Q.8) Under which of the following Act, the Animal Welfare Board of India (AWBI) established?

- a) The Indian Forest Act, 1927
- b) The Prevention of Cruelty to Animals Act, 1960
- c) The Wildlife Protection Act, 1972
- d) The Forest (Conservation) Act, 1980

ANS: B

Explanation:

- The Animal Welfare Board of India is a statutory advisory body on Animal Welfare Laws and promotes animal welfare in the country.
- Established in 1962 under Section 4 of the Prevention of Cruelty to Animals Act, 1960 (No. 59 of 1960), the Animal Welfare Board of India was started under the stewardship of Late Smt. Rukmini Devi Arundale, well known humanitarian.
- From ensuring that animal welfare laws in the country are diligently followed, to provide grants to Animal Welfare Organizations and advising the Government of India on animal welfare issues, the Board has been the face of the animal welfare movement in the country for the last 50 years. The Board consists of 28 Members. The term of office of Members is for a period of 3 years.

Source: <http://www.awbi.in/about.html>

Q.9) Which of the following convention related to Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters?

- a) Rotterdam convention
- b) Aarhus Convention
- c) Berne Convention
- d) Basel Convention

ANS: B

Explanation:

- The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters was adopted on 25th June 1998 in the Danish city of Aarhus at the Fourth Ministerial Conference in the 'Environment for Europe' process.
- Together with its Protocol on Pollutant Release and Transfer Registers, it protects every person's right to live in an environment adequate to his or her health and well-being.
- They are the only global legally binding global instruments on environmental democracy that put Principle 10 of the Rio Declaration on Environment and Development in practice.

Source: <https://ec.europa.eu/environment/aarhus/>

Q.10) Consider the following statements with respect to World Energy Council (WEC):

1. WEC is an Inter-Governmental organization
2. The World Energy Council has developed an interactive tool-The World Energy Issues Monitor

Which of the following codes below given is/are NOT correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation:

- The World Energy Council was created in 1923, when visionary Daniel Dunlop brought together 40 countries to discuss the problems facing the global energy industry. Ever since, the World Energy Council has been non-governmental and non-commercial.
- The Council has withstood many changes, from geopolitical and economic upheavals to a complete shift in the way people understand and use energy.
- It has had to adapt to a changing world. Throughout history, it has never strayed from the initial concept of an organization that is impartial, objective and realistic.
- As a result, its analyses and agendas for action have always promoted sustainable energy for all.
- Today, The World Energy Council has almost 100 national member committees. Its member list includes governments, businesses and expert organizations.
- The World Energy Congress, held over 20 times since the organization's founding, is the world's premier energy gathering. The World Energy Council continues to build on its long, stable history as a key player on the global energy scene.
- The World Energy Council has developed an interactive tool - The World Energy Issues Monitor. The Monitor is an annual reality check of 2,000+ leaders worldwide focusing on the challenges of energy transition.

Source: <https://www.worldenergy.org/about-us>

History

Q.1) Consider the following statements with respect to Indus Valley Civilization:

1. Evidence of a ploughed field is found at Rakhigarhi, Haryana.
2. The main entrance gives a direct view of the courtyard.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation:

- Archaeologists have found evidence of a ploughed field at Kalibangan (Rajasthan), associated with Early Harappan levels.
- Agricultural technologies: While the prevalence of agriculture is indicated by finds of grain, it is more difficult to reconstruct actual agricultural practices.
- Representations on seals and terracotta sculpture indicate that the bull was known, and archaeologists extrapolate from this that oxen were used for ploughing.
- Moreover, terracotta models of the plough have been found at sites in Cholistan and at Banawali (Haryana).
- The field had two sets of furrows at right angles to each other, suggesting that two different crops were grown together.
- Citadel and Lower town were physically separated from each other.
- The settlement is divided into two sections, one smaller but higher and the other much larger but lower.

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- Archaeologists designate these as the Citadel and the Lower Town respectively. The Citadel owes its height to the fact that buildings were constructed on mud brick platforms. It was walled, which meant that it was physically separated from the Lower Town.
- The Lower Town was also walled. Several buildings were built on platforms, which served as foundations.
- It has been calculated that if one labourer moved roughly a cubic metre of earth daily, just to put the foundations in place it would have required four million person-days, in other words, mobilising labour on a very large scale.

Domestic architecture:

- The Lower Town at Mohenjodaro provides examples of residential buildings. Many were centred on a courtyard, with rooms on all sides.
- The courtyard was probably the centre of activities such as cooking and weaving, particularly during hot and dry weather.
- What is also interesting is an apparent concern for privacy: there are no windows in the walls along the ground level.
- Every house had its own bathroom paved with bricks, with drains connected through the wall to the street drains.
- Some houses have remains of staircases to reach a second storey or the roof. Many houses had wells, often in a room that could be reached from the outside and perhaps used by passers-by.

Source: Themes in Indian History

Q.2) Consider the following pairs:

Harappan Sites	Material associated
1. Balakot	Shells
2. Lothal	Copper
3. Shortughai	Lapis Lazuli

How many of the above given pairs is/are correctly matched?

- a) One pair only
- b) Two Pairs only
- c) All Three pairs
- d) None

ANS: B

Explanation: Indus Valley Civilisation:

- Materials from the subcontinent and beyond
- The Harappans procured materials for craft production in various ways.
- Nageshwar and Balakot areas were famous for shells.
- Lothal which was near sources of carnelian (from Bharuch in Gujarat), steatite (from south Rajasthan and north Gujarat) and metal (from Rajasthan).
- Another strategy for procuring raw materials may have been to send expeditions to areas such as the Khetri region of Rajasthan (for copper) and south India (for gold).
- Sites such as Shortughai, in far-off Afghanistan, near the best source of lapis lazuli, a blue stone that was apparently very highly valued.

Source: Themes in Indian History

Q.3) Which of the following Cave temples located in Tamil Nadu?

1. Varaha Temple
2. Lord Balaji Temple
3. Panchapandava Temple

Select the correct answers using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation: The ancient port city of Mamallapuram under Pallava dynasty in Tamil Nadu, flourished with a number of marvelous architecture. These seventh century Pallava sites have been declared as UNESCO World Heritage Site in 1984 by the name “Group of Monuments at Mahabalipuram. They include:

- Ratha temples or Pancha Ratha: Also known as Pandava Rathas, they are the earliest rock cut temples in India, comprising of Dharmaraja Ratha, Bhima Ratha, Arjuna Ratha, Nakula and Sahadeva Ratha, and Draupadi Ratha, dated around 7th century AD. Dharmaraja Ratha is the largest structure among the five.
- Rock-cut caves: which include Varaha Cave Temple, Krishna Cave Temple, Panchapandava Cave Temple, and the Mahishasuramardini Mandapa (Bas-relief of Goddess Durga killing Mahishasura).

Source: NCERT

Q.4) Consider the following pairs:

Region	Name as per Mesopotamian text
1. Oman	Magan
2. Bahrain	Dilmun
3. Harappan Region	Meluhha

How many of the above given pairs is/are correctly matched?

- a) One pair only
- b) Two Pairs only
- c) All Three pairs
- d) None

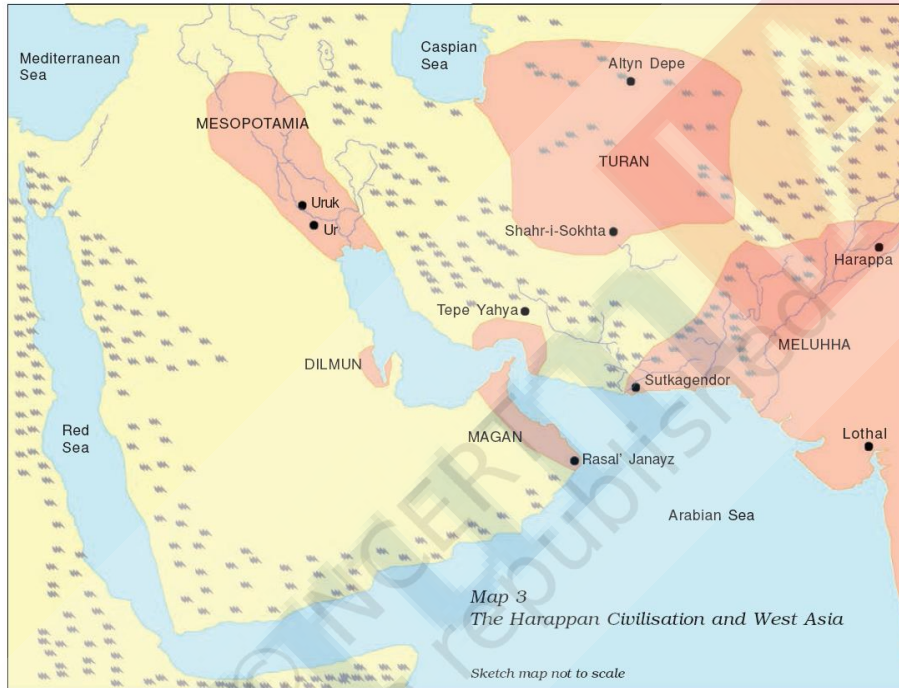
ANS: C

Explanation: Indus Valley Civilisation:

- Contact with distant lands
- Recent archaeological finds suggest that copper was also probably brought from Oman, on the southeastern tip of the Arabian Peninsula.
- Chemical analyses have shown that both the Omani copper and Harappan artefacts have traces of nickel, suggesting a common origin. There are other traces of contact as well.
- A distinctive type of vessel, a large Harappan jar coated with a thick layer of black clay has been found at Omani sites. Such thick coatings prevent the percolation of liquids.
- Mesopotamian texts datable to the third millennium BCE refer to copper coming from a region called Magan, perhaps a name for Oman, and interestingly enough copper found at Mesopotamian sites also contains traces of nickel.

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- Other archaeological finds suggestive of long distance contacts include Harappan seals, weights, dice and beads.
- In this context, it is worth noting that Mesopotamian texts mention contact with regions named Dilmun (probably the island of Bahrain), Magan and Meluhha, possibly the Harappan region.
- They mention the products from Meluhha: carnelian, lapis lazuli, copper, gold, and varieties of wood.
- It is likely that communication with Oman, Bahrain or Mesopotamia was by sea. Mesopotamian texts refer to Meluhha as a land of seafarers. Besides, we find depictions of ship sand boats on seals.



Source: Themes in Indian History

Q.5) Who among the following deciphered Brahmi and Kharosthi script?

- a) R.E.M. Wheeler
- b) John Marshall
- c) Daya Ram Sahni
- d) James Prinsep

ANS: D

Explanation:

- Some of the most momentous developments in Indian epigraphy took place in the 1830s.
- This was when James Prinsep, an officer in the mint of the East India Company, deciphered Brahmi and Kharosthi, two scripts used in the earliest inscriptions and coins.
- He found that most of these mentioned a king referred to as Piyadassi – meaning “pleasant to behold”; there were a few inscriptions which also referred to the king as Asoka, one of the most famous rulers known from Buddhist texts.

Source: Themes in Indian History

Q.6) Arrange the following Ashokan Pillars/rock edicts from south to north:

1. Shahbazgarhi
2. Kaushambi
3. Jaugada
4. Brahmagiri

Select the correct answer using the codes given below:

- a) 1 3 4 2
- b) 4 2 3 1
- c) 1 2 3 4
- d) 4 3 2 1

ANS: D

Explanation

- The inscriptions of Asoka (c. 272/268-231BCE) on rocks and pillars are often regarded as amongst the most valuable sources.
- Asoka was the first ruler who inscribed his messages to his subjects and officials on stone surfaces – natural rocks as well as polished pillars.
- He used the inscriptions to proclaim what he understood to be dhamma.
- This included respect towards elders, generosity towards Brahmanas and those who renounced worldly life, treating slaves and servants kindly, and respect for religions and traditions other than one's own.



Source: Themes in Indian History

Q.7) Kassapa, Sariputta, Moggallanna, Ananda and Upali were disciples of which of the following?

- a) Mahavira
- b) Buddha
- c) GoshalaMaskariputra
- d) Charvaka

ANS: B

Explanation

- The most important disciples of Buddha were Sariputta, Moggallanna, Ananda, Kassapa and Upali.
- Kings like Prasenajit of Kosala and Bimbisara and Ajatasatru of Magadha accepted his doctrines and became his disciples.

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- Buddha in his lifetime spread his message far and wide in north India and visited places like Benares, Rajagriha, Sravasti, Vaisali, Nalanda and Pataligrama.
- It should be noted that he did not involve himself in fruitless controversies regarding metaphysical questions like god, soul, karma, rebirth, etc., and concerned himself with the practical problems confronting man.

Source: Tamil Nadu Board

Q.8) Consider the following statements with respect to Kailash Temple:

1. Temple was built by Pallava King Narasimhan I.
2. Temple is dedicated to Lord Vishnu.

Which of the following codes given below is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation:

- Kailash Temple is located near the village of Ellora which is 30 km from Aurangabad.
- This temple is considered as one among the most astonishing buildings in the history of architecture.
- This temple is one of the largest 34 excavations at Ellora, which took almost a century. The Kailash Temple is dedicated to Lord Shiva and the idol here is 109 feet wide by 164 feet long.
- The Kailash Temple of the Ellora is the most and amazing architecture of the Rock art and the marvelous art.
- This Kailash temple was made by the Rashtrakuta King that is King Krishna I in the 8th Century A.D.
- It is the huge and big sculpture of the rocks that made the big elephant in the couple of the head and that are the sign of the great emperor.

Source: NCERT

Q.9) Who among the following is known as “Father of cosmetic Surgery”?

- a) Maharishi Sushruta
- b) B. Kapil Mani
- c) Charak Rishi
- d) Acharya Kanad

ANS: A

Explanation:

- During the 6th century BCE, an Indian physician named Sushruta - widely regarded as the 'Father of Indian Medicine' and 'Father of Plastic Surgery' - wrote one of the world's earliest works on medicine and surgery.
- Sushruta lived in the ancient city of Kashi, now known as Varanasi or Banaras in the northern part of India.

Sushruta Samhita:

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- Sushruta is known for his pioneering operations and techniques and for his influential treatise 'Sushruta Samhita' or Compendium of Sushruta, the main source of knowledge about surgery in ancient India.
- Written in Sanskrit, the Sushruta Samhita dates back to the times before Christ and is one of the earliest works in the field of medicine.
- It forms the foundations of the ancient Hindu form of medicine known as Ayurveda and is highly regarded as one of the 'Great Trilogy of Ayurvedic Medicine.'

Source: NCERT

Q.10) Copper Age is also known as:

- a) Paleolithic
- b) Mesolithic
- c) Neolithic
- d) Chalcolithic

ANS: D

Explanation:

- Chalco and lithic have been derived from greek words which mean Copper and stone respectively.
- People in this phase used copper tools along with stone tools; hence it is given such name. Chalcolithic Age is considered to be a transition between Stone Age and Bronze Age.

Source: NCERT

Schemes/ Programmes/ Institution

Q.1) Consider the following statements with respect to Peace Forest Initiative (PFI):

1. It is established by UN Convention to Combat Desertification (UNCCD) and Japan.
2. Initiative will support land and forest rehabilitation in post conflict areas to reduce peace and security challenges stemming from natural resource degradation.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation:

- The UN Convention to Combat Desertification (UNCCD) and the Government of the Republic of Korea Forest Service (KFS) has signed a Memorandum of Understanding (MoU) to establish the Peace Forest Initiative (PFI).
- The Initiative will support land and forest rehabilitation in post conflict areas to reduce peace and security challenges stemming from natural resource degradation.

Source: ForumIAS- Factly

Q.2) Which of the following is/are components of National Initiative for Developing and Harnessing Innovations (NIDHI)?

1. Technology Business Incubator (TBI).
2. Accelerator-Fast tracking a start-up through focused intervention.
3. PRomoting and and accelerating Young and Aspiring Innovators and Startups (NIDHI-PRAYAS).

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: National Initiative for Developing and Harnessing Innovations (NIDHI)

- National Initiative for Developing and Harnessing Innovations (NIDHI) is an umbrella scheme to support ideas and innovations (knowledge-based and technology-driven) into successful startups. Components:
 - NIDHI GCC – Grand Challenges and Competitions for scouting innovations
 - NIDHI – PRomoting and and accelerating Young and Aspiring Innovators and Startups (NIDHI-PRAYAS) – Support from Idea to Prototype
 - NIDHI-Entrepreneur In Residence (NIDHI-EIR)-Support system to reduce risk Startup-NIDHI
 - NIDHI-Technology Business Incubator(TBI)-Converting Innovations to start-ups
 - NIDHI-Accelerator-Fast tracking a start-up through focused intervention

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- NIDHI-Seed Support System (NIDHI-SSS)-Providing early stage investment
- NIDHI Centres of Excellence (NIDHI-CoE)-A World class facility to help startups go global

Source: [https://www.indiascienceandtechnology.gov.in/listingpage/startup-grants-nidhi-programme#:~:text=National%20Initiative%20for%20Developing%20and,technology%20Ddriven\)%20into%20successful](https://www.indiascienceandtechnology.gov.in/listingpage/startup-grants-nidhi-programme#:~:text=National%20Initiative%20for%20Developing%20and,technology%20Ddriven)%20into%20successful)

Q.3) Consider the following statements with respect to The World Tourism Organization (UNWTO):

1. UNWTO promotes tourism as a driver of economic growth, inclusive development and environmental sustainability.
2. All countries of United Nations are members of UNWTO.

Which of the above given statement is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation:

- As the leading international organization in the field of tourism, UNWTO promotes tourism as a driver of economic growth, inclusive development and environmental sustainability and offers leadership and support to the sector in advancing knowledge and tourism policies worldwide.
- UNWTO encourages the implementation of the Global Code of Ethics for Tourism, to maximize tourism's socio-economic contribution while minimizing its possible negative impacts, and is committed to promoting tourism as an instrument in achieving the Sustainable Development Goals (SDGs), geared towards reducing poverty and fostering sustainable development worldwide.
- UNWTO's membership includes 159 countries, 6 Associate Members and over 500 Affiliate Members representing the private sector, educational institutions, tourism associations and local tourism authorities.

Source: https://www.wto.org/english/thewto_e/thewto_e.htm

Q.4) Which of the following Diseases is/are covered under the National Vector Borne Disease Control Programme?

1. Malaria
2. Tomatopox
3. Monkeypox

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: A

Explanation: National Vector Borne Disease Control Programme (NVBDCP)

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- Directorate of National Vector Borne Disease Control Programme (NVBDCP) is the central nodal agency for prevention and control of six vector borne diseases (VBDs) i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya in India.
- It is part of the Technical Division of the Directorate General of Health Services, Government of India, equipped with Technical Experts in the field of Public Health, Entomology, Toxicology and parasitological aspects of Vector Borne Diseases.
- The Directorate is responsible for framing technical guidelines & policies as to guide the states for implementation of the above mentioned six diseases Programme strategies& is also responsible for budgeting and planning the logistics pertaining to GOI supply.
- Monitoring is done through regular reports and returns of MIS. The Directorate carries out evaluation of Programme implementation activities from time to time.
- The resource gap is also assessed as to provide an equitable support based on the magnitude of the problem and the available resources.

Source: <https://nvbdc.gov.in/index1.php?lang=1&level=0&linkid=405&lid=3681>

Q.5) Consider the following statements with respect to National Pharmaceutical Pricing Authority (NPPA):

1. It was created by National Pharmaceutical Pricing Act, 1997.
2. It is an independent Regulator for pricing of drugs and to ensure availability and accessibility of medicines at affordable prices.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: National Pharmaceutical Pricing Authority (NPPA) was constituted vide Government of India Resolution dated 29th August, 1997 as an attached office of the Department of Pharmaceuticals (DoP), Ministry of Chemicals & Fertilizers as an independent Regulator for pricing of drugs and to ensure availability and accessibility of medicines at affordable prices.

Source: <https://pharmaceuticals.gov.in/national-pharmaceutical-pricing-authority>

Q.6) Consider the following statements about Biological and Toxin Weapons Convention (BTWC):

1. It is the first multilateral disarmament treaty banning the production of an entire category of weapons.
2. India is not a signatory to the convention.

Which of the above given statement is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

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Explanation: The Biological and Toxin Weapons Convention (BTWC) opened for signature in 1972 and entered into force in 1975. It is the first multilateral disarmament treaty banning the production of an entire category of weapons.

Obligations: The treaty bans the development or acquire or transfer of

- a) biological agents or toxins that have no justification for peaceful uses and
- b) weapons or equipment designed to use such agents or toxins for hostile purposes.

Members: It currently has 183 states. India signed the convention in 1973.

Source: <https://www.un.org/disarmament/biological-weapons/>

Q.7) “Global Microscope Report” released by which of the following Institution?

- a) World Economic Forum
- b) World Health Organisation
- c) UNESCO
- d) Economic Intelligence Unit

ANS: D

Explanation:

- The Global Microscope for Financial Inclusion report is produced by the Economist Intelligence Unit. The report was first published in 2007.
- The report is a benchmarking index that assesses the enabling environment for financial access in 55 countries.

The report assessed countries across four basic enabler’s namely

- allowing non-banks to issue e-money
- presence of financial service agents
- proportionate customer due diligence and
- effective financial consumer protection.

Source: <https://www.eiu.com/landing/Global-Microscope>

Q.8) Consider the following statements with respect to functions of NITI Aayog:

1. It is a ‘primary platform’ for operational-izing cooperative federalism.
2. It will ‘evolve’ a shared vision of national development priorities and strategies.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: NITI Aayog, is designed to live up to the principle of ‘Team India’ with its following officially demarcated functions:

1. Cooperative and Competitive Federalism: It will be the ‘primary platform’ for operationalising cooperative federalism, enabling states to have active participation in the formulation of national policy, as well as achieving time-bound implementation of quantitative and qualitative targets through the combined authority of the Prime Minister and the Chief Ministers.
2. Shared National Agenda: It will ‘evolve’ a shared vision of national development priorities and strategies, with the active involvement of the states. This will provide the framework ‘national agenda’ for the Prime Minister and Chief Ministers to implement.

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3. State's Best Friend at the Centre: It will support states in addressing their own challenges, as well as building on strengths and comparative advantages. This will be through various means, such as coordinating with ministries, championing their ideas at the Centre, providing 'consultancy' support and 'building capacity'.

Source: <https://www.niti.gov.in/objectives-and-features>

Q.9) Consider the following statements with respect to South Asia Co-operative Environment Programme (SACEP):

1. It was established in 1982 by the governments of South Asia to promote and support protection, management and enhancement of the environment in the region
2. It is headquartered in Thimpu, Bhutan.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: South Asia Co-operative Environment Programme (SACEP)

- South Asia Co-operative Environment Programme (SACEP) is an intergovernmental organization. It is headquartered in Colombo, Sri Lanka.
- It was established in 1982 by the governments of South Asia to promote and support protection, management and enhancement of the environment in the region.
- The members of SACEP include Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SACEP also acts as the Secretariat for the South Asian Seas Programme which comes under the purview of UNEP's Regional Seas Programme.

Source: <http://www.sacep.org/about-us>

Q.10) Which of the following Institutions were created under United Nations Convention on the Law of the Sea (UNCLOS)?

1. International Tribunal for the law of the sea
2. International Seabed Authority
3. Commission on the limits of the Continental Shelf

Select the correct answer using the codes given below:

- a) 1, 2 and 3
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1 and 3 only

ANS: A

Explanation: United Nations Convention on the Law of the Sea (UNCLOS)

- The United Nations Convention on the Law of the Sea (UNCLOS) is an international treaty which was adopted and signed in 1982.
- It replaced the four Geneva Conventions of April, 1958, which respectively concerned the territorial sea and the contiguous zone, the continental shelf, the high seas, fishing and conservation of living resources on the high seas.

The Convention has created three new institutions on the international scene:

- The International Tribunal for the Law of the Sea,
- The International Seabed Authority,
- The Commission on the Limits of the Continental Shelf.

Source:

<https://www.imo.org/en/OurWork/Legal/Pages/UnitedNationsConventionOnTheLawOfTheSea.aspx#:~:text=The%20United%20Nations%20Convention%20on,the%20oceans%20and%20the%20resources.>

Science and Technology

Q.1) Which of the following given statement about Monkrypox is/are correct?

1. Monkeypox is a bacterial zoonotic disease.
2. Human-to-human transmission is not limited and spreads very rapidly.
3. There is safe and proven treatment for monkeypox.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) None

ANS: D

Explanation: Monkeypox:

- Monkeypox is a viral zoonotic disease (a disease that is transmitted from infected animals to humans) that occurs primarily in tropical rainforest areas of Central and West Africa.
- It is occasionally exported to other regions. Monkeypox belongs to the orthopoxvirus, (same genus as that of variola virus which causes smallpox).
- Human-to-human transmission is very limited. Transmission can be through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets and contaminated objects.
- There is no safe, proven treatment for monkeypox yet. According to the WHO, the proportion of patients who die has varied between 0 and 11% in documented cases, and has been higher among young children.

Source: EPIC June 2022

Q.2) Consider the following statements about West Nile Virus:

1. It is a mosquito-borne, single-stranded DNA virus.
2. Culex species of mosquitoes act as the principal vectors for transmission.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: West Nile Virus:

- It is a mosquito-borne, single-stranded RNA virus. It is a member of the flavivirus genus and belongs to the Japanese encephalitis antigenic complex of the family Flaviviridae.
- Currently, the virus is found commonly in Africa, Europe, the Middle East, North America, and West Asia.
- Culex species of mosquitoes act as the principal vectors for transmission. It is transmitted by infected mosquitoes between and among humans and animals, including birds, which are the reservoir host of the virus.

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- To date, no human-to-human transmission of WNV through casual contact has been documented. A man in Thrissur (Kerala) died recently due to West Nile Virus.

Source: EPIC June 2022

Q.3) Consider the following statements about International Liquid Mirror Telescope (ILMT):

1. It has been commissioned in Leh.
2. It has been built by India, US and Japan.

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: International Liquid Mirror Telescope (ILMT):

- The International Liquid Mirror Telescope (ILMT) has been commissioned in Devasthal, Uttarakhand. It has been built by India, Belgium and Canada.
- It is located at an altitude of 2450 meters at the Devasthal Observatory campus of Aryabhata Research Institute of Observational Sciences (ARIES).
- It is the first liquid mirror telescope in the country and the largest in Asia.

Source: EPIC June 2022

Q.4) PARAM ANANTA supercomputing facility has been established under Phase 2 of the NSM at which of the following?

- a) IIT Roorkee
- b) IIT Gandhinagar
- c) Indian Institute of Tropical Meteorology
- d) Centre for Development of Advanced Computing

ANS: B

Explanation: PARAM ANANTA:

- PARAM ANANTA supercomputing facility has been established under Phase 2 of the NSM at IIT Gandhinagar with 838 TeraFlops Supercomputing Facility.
- It is also based on Direct Contact Liquid Cooling technology. With Param Ananta, India now has 15 supercomputers with a combined performance capability of 24 petaflops.

Source: EPIC June 2022

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Q.7) Which of the following given statement about Astra Mk-1 Missile is not correct?

- It is Surface to air missile.
- It has been designed and developed by DRDO.
- The missile can travel at speeds more than four times that of sound.
- It will be deployed on fighter jets like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy.

ANS: A

Explanation: Astra Mk-1 Missile:

- The Astra Mk-1 is a beyond visual range (BVR) air-to-air missile (AAM). BVM missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometres.
- AAMs are fired from an airborne asset to destroy an airborne target. It has been designed and developed by DRDO for deployment on fighter jets like Sukhoi-30 MKI and Tejas of the IAF and the Mig-29K of the Navy.
- Its range is 110 kms. The missile can travel at speeds more than four times that of sound. AAMs with BVR capability provides large off ranges to fighter aircraft.
- This can neutralize adversary airborne assets without exposing themselves to adversary air defence measures.
- Stand-off range means the missile is launched at a distance sufficient to allow the attacking side to evade defensive fire from the target.

Source: EPIC June 2022

Q.8) Consider the following statements about Prithvi-II Missile:

- It is Surface-to-Surface short-range ballistic missile (SRBM).
- The missile is powered by liquid propulsion twin engines.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: C

Explanation: Prithvi-II Missile:

- The night trial of Prithvi-II has been conducted successfully. It is a Surface-to-Surface short-range ballistic missile (SRBM).
- It has been developed by DRDO under the Integrated Guided Missile Development Program (IGMDP). Its range is 350 kms.
- It is capable of carrying 500-1,000 kg of warheads. The missile is capable of striking targets with a very high degree of precision.
- The missile is powered by liquid propulsion twin engines. The missile also uses an advanced inertial guidance system with manoeuvring trajectory to hit its target.

Source: EPIC June 2022

Q.9) Consider the following statements about International Science Council:

1. It is headquartered in Geneva.
2. It was formed post Covid-19 outbreak as an international non-governmental organization.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: About International Science Council:

It was formed in 2018. It is an international non-governmental organization that unites scientific bodies at various levels across the social and natural sciences. It is headquartered in Paris, France.

Key Highlights

The report considered three potential scenarios through the year 2027:

First: It is the most likely scenario. COVID-19 will have worsened inequalities in health, economics, development, science and technology, and society.

Second: COVID-19 will have become an endemic disease worldwide and low-income states may face risk of health system collapse and growing food insecurity. Mental health concerns will grow even further.

Third: It is the most pessimistic scenario. The world faces high levels of harm to social wellbeing — with long-term school closures, unemployment and increased gender-based violence. Growing nationalism and polarization will inhibit cooperation on global vaccinations and trade and give rise to conflict.

Recommendations given by the Report

- Increase adoption of the One Health approach to minimize environmental impacts and future pandemic risks.
- Increase investment and knowledge sharing from high-income states.
- Address the challenges of disinformation and strengthen diverse scientific advice systems to increase trust in science thereby protecting societies from acute health risks and the breakdown of social cohesion.
- National and global policy considerations should address widening global inequalities not only in vaccine distribution but also related to inclusive governance, economic recovery and the digital and educational divide.

Source: EPIC June 2022

Q.10) Consider the following statements about eVTOL Aircraft:

1. eVTOL Aircraft is one that uses electric power to hover, take off, and land vertically.
2. eVTOLs use the distributed electric propulsion technology.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: About the Electric Vertical Take-off and Landing (eVTOL) Aircraft:

- eVTOL Aircraft is one that uses electric power to hover, take off, and land vertically. Most eVTOLs use the distributed electric propulsion technology.
- This technology integrates a complex propulsion system with the airframe.
- This technology has grown on account of successes in electric propulsion based on progress in motor, battery, fuel cell and electronic controller technologies.
- The development is also fuelled by the need for new vehicle technology that ensures urban air mobility (UAM).

Significance of eVTOL

- eVTOL is being seen as a runway independent technological solution for the globe's transportation needs.
- It opens up new possibilities that aircraft with engines cannot carry out in areas such as manoeuvrability, efficiency and even from the environmental point of view.
- eVTOLs have also been likened to a third wave in an aerial revolution; the first being the advent of commercial flying and the second the age of helicopters.

Source: EPIC June 2022

Economics

Q.1) Consider the following statements about GST:

1. The Goods and Services Tax (GST) is a direct tax on the manufacture, sale, and consumption of goods and services throughout India except Jammu and Kashmir.
2. GST is applied to all goods other than crude petroleum, motor spirit, diesel, aviation turbine fuel, natural gas and alcohol for human consumption.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: What is the GST and its key provisions?

- The Goods and Services Tax (GST) is an indirect tax on the manufacture, sale, and consumption of goods and services throughout India;
- It was launched in 2017. It replaced the existing indirect taxes with varying rates levied by the Union and State Governments. It is a single uniform tax applicable in the whole nation;
- It is a destination-based tax applied on goods and services at the place where final/actual consumption happens;
- GST is applied to all goods other than crude petroleum, motor spirit, diesel, aviation turbine fuel, natural gas and alcohol for human consumption;
- There are four slabs for taxes for both goods and services: 5%, 12%, 18%, and 28%. Different tax slabs were introduced because goods of daily necessities could not be subjected to the same rate as luxury items;
- A cess is levied on the highest tax slab of 28% on luxury, sin and demerit goods. The collection from the cess goes to a separate corpus called Compensation fund. It is used to make up for revenue loss suffered by the States due to roll out of the GST. States were promised a compensation for 5 years if their GST collection falls short of the 14 percent compounded revenue growth.

Source: EPIC July 2022

Q.2) Which of the statements given below is/are correct?

1. National Anti-profiteering Authority (NAA) was setup in 2020.
2. It ensures that GST rate reductions were passed on by firms to consumers and there was no profiteering.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: National Anti-profiteering:

Authority (NAA): The NAA was set up in December, 2017 to ensure that GST rate reductions were passed on by firms to consumers and there was no profiteering.

But right from the outset, the process of imposing penalties on companies was criticised for the alleged lack of a proper methodology to ascertain profiteering. As of May, there are close to 400 cases pending with it.

Source: EPIC July 2022

Q.3) Which of the following is a step taken by RBI in response to falling Rupee?

1. State-run banks are usually instructed by the RBI to buy Dollars.
2. RBI is raises benchmark interest rates.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation:

How does the RBI respond to the fall in the Exchange Rate?

- As a matter of policy, the RBI has usually tried to slow down or smoothen (rather than reverse or prevent) the fall in exchange rate;
- The aim of the RBI's policy is to allow the Rupee to find its natural value in the market but without undue volatility;
- State-run banks are usually instructed by the RBI to sell Dollars in order to offer some support to the Rupee. By selling Dollars in the open market in exchange for Rupees, the RBI can improve demand for the Rupee and cushion its fall;
- The RBI is also seen raising benchmark interest rates to defend the Rupee by preventing any rapid outflow of capital from India.

Source: EPIC July 2022

Q.4) Consider the following statements about Gig Economy:

1. Gig workers as those engaged in livelihoods outside traditional employer-employee relationship.
2. At present more than 50% of gig workers in India are engaged in retail trade and sale.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: What is Gig Economy and Gig Worker?

- Gig Economy is the evolving economic model wherein the firms hire workers on a part-time flexible basis rather than as full time employees;
- The Code on Social Security, 2020 defines gig workers as those engaged in livelihoods outside traditional employer-employee relationship;

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- The workers work as freelancers or independent contractors. They generally have flexible and adaptable working hours based on individual preferences;
- The jobs in gig economy typically require interacting with the users through online platforms e.g., the drivers engaged with cab hailing platforms (Uber, Ola etc.), delivery workers engaged with restaurant aggregators (Zomato, Swiggy etc.), or tutors delivering lectures over online platforms. The workers engaged in such jobs are called Gig Workers;
- Gig Workers can be broadly classified into 2 categories: platform- and non-platform-based workers:
 - Platform workers are those whose work is based on online software apps or digital platforms.
 - Non-platform gig workers are generally casual wage workers and own-account workers in the conventional sectors, working part-time or full time;
- The Gig workers can also be classified on the basis of skills. These are high-skilled, medium-skilled and low-skilled workers.
- According to the NITI Aayog Report, at present, about 47% of the gig work is in medium-skilled jobs, about 22% in high-skilled jobs, and about 31% in low-skilled jobs.
- Trends show that the concentration of workers in medium skills is gradually declining and that in low skills and high skills is increasing.

What is the size of Gig Economy in India? –

- According to NITI Aayog Report, India's gig workforce currently stands at 77 lakh (2020-21). It is expected to rise to 2.35 crore by 2029-30;
- By 2029-30, gig workers will form 4.1% of India's total workforce, rising from 1.5% in 2020-21;
- Currently 27 lakh gig workers (35% of gig workers) are engaged in retail trade and sale, while 13 lakh (17%) are engaged in transportation sector. There are 6 lakh workers (8%) in manufacturing and another 6 lakh (8%) in finance and insurance;
- A report by the Boston Consulting Group expects India's gig economy to rise to 90 million jobs (9 crore) in the next 8-10 years;
- Another industry report indicates that by 2024, more than 75% of the services industry will be staffed by gig workers;
- A report by Ernst and Young observed that Indian Freelancers hold a 24% share of the global online gig economy;
- According to a recent survey by a private firm, Quick Commerce, Healthtech, Fintech, and e-Commerce are the top sectors in the Indian gig economy. Within the gig workforce, work-from-home jobs account for 33% of the roles and 67% were on-field roles.

Source: EPIC July 2022

Q.5) Consider the following statements about WTO's Ministerial Conference:

1. It is the WTO's top decision-making body that meets every 5th Year.
2. WTO members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: What is WTO's Ministerial Conference? –

- The Ministerial Conference (MC) is the WTO's top decision-making body. It usually meets every 2 years;
- All members of the WTO are involved in the MC and they can take decisions on all matters covered under any multilateral trade agreements.

What are the key takeaways from the 12th Ministerial Conference? –

- Curtailing harmful fishing subsidies: The WTO has passed a multilateral agreement that would curb 'harmful' subsidies on illegal, unreported and unregulated fishing for the next 4 years. Since 2001, member states have been negotiating the banning of subsidies that promote overfishing;
- Exemption for Food Security: Members agreed to a binding decision to exempt food purchased by the UN's World Food Programme (WFP) for humanitarian purposes, from any export restrictions. Countries would be allowed to restrict food supplies to ensure domestic food security needs;
- Moratorium on e-commerce transactions: Members agreed to continue the long-standing moratorium on custom duties on e-commerce transmissions. It will be continued until the subsequent Ministerial Conference or until March 31, 2024, depending on whichever comes first;
- Temporary Waiver on COVID-19 vaccines: WTO members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years.

What is the significance of the recent agreements? –

- The fisheries agreement is of immense significance as it is the first time that members concluded an agreement with environmental sustainability at its heart. It will help in the protection of livelihoods of the 260 million people who depend on marine fisheries. It is only the 2nd multilateral agreement on global trade rules struck in its 27-year history;
- The exemption of WFP's food from tariffs is vital for promoting global food security;
- The temporary waiver will contribute to ongoing efforts to concentrate and diversify vaccine manufacturing capacity so that a crisis in one region does not leave others cut off.

Source: EPIC July 2022

Q.6) Trickle Down theory ignores the impact of economic growth on which of the following?

- a) Consumption
- b) Saving
- c) Income distribution
- d) Investment

ANS: C

Explanation: Trickle Down theory

- Trickle Down theory ignores the impact of economic growth on income distribution
- The proponents of trickle-down economics, argues that rising incomes at the top end of the spectrum would lead to more jobs, more output, more income, and less poverty as the growth and higher incomes at the top end will move at the lower end and to the poor. According to this thesis, as long as an economy is growing, the benefits will eventually reach the poor and make their way through the system that will make everyone better off.
- The theory of Trickle Down represents an unhealthy obsession with GDP and Growth as the most reliable measure of economic success. The theory believes in the saying 'One size fits all'. The theory argues that to eradicate poverty, the only thing that matters is growth. A growing economy will take care of everything. As growth happens, the fruits of growth will eventually flow to the poorest and the lower section of the society and ultimately lifting them up.
- The Critique of Trickle Down Economics: The IMF and the World Bank in their various reports has rejected the idea of trickle-down economics. They found out that the benefits of growth within an economy are rarely spread evenly, but also that an unequal rise in incomes can actually slow the rate of economic growth altogether

Source: ForumIAS

Q.7) Consider the following statements regarding poverty estimation:

1. Tendulkar Committee was established to review the Rangrajan Committee report.
2. Rangrajan Committee only counted expenditure on food, health, education, and clothing.

Which of the above given statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: Poverty Estimation

- In 2005, the Suresh Tendulkar committee was constituted by the Planning Commission. The current estimations of poverty are based upon the recommendations of this committee. This committee recommended to shift away from the calorie based model and made the poverty line somewhat broad-based by considering monthly spending on education, health, electricity, and transport also.
- It strongly recommended target nutritional outcomes i.e. instead of calories; intake nutrition support should be counted.
- It suggested that a uniform Poverty Basket Line be used for the rural and urban regions.

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- It recommended a change in the way prices are adjusted and demanded an explicit provision in the Poverty Basket Line to account for private expenditure in health and education.
- Tendulkar adopted the cost of living as the basis for identifying poverty.
- The Tendulkar panel stipulated a benchmark daily per capita expenditure of Rs. 27 and Rs. 33 in rural and urban areas, respectively, and arrived at a cut-off of about 22% of the population below the poverty line. However, this amount was such low that it immediately faced a backlash from all sections of media and society.
- Since the numbers were unrealistic and too low, the government-appointed another committee under Prime Minister's Economic Advisory Council Chairman C. Rangarajan to review the poverty estimation methodology. Brushing aside the Tendulkar Committee.
- Rangarajan committee raised these limits to Rs. 32 and Rs. 47, respectively, and worked out the poverty line at close to 30%. With estimates of Rangarajan committee, Poverty stood at around 30% in 2011-12. The number of poor in India was estimated at 36.3 crores in 2011-12.
- The Rangarajan group took the view that the consumption basket should contain a food component that satisfied certain minimum nutrition requirements, as well as consumption expenditure on essential non-food item groups (education, clothing, conveyance and house rent) besides a residual set of behaviourally determined non-food expenditure.

Source: Ramesh Singh

Q.8) Who among the following was the first to discuss the concept of the 'Poverty Line' in India?

- a) Dadabhai Naoroji
- b) R. C. Dutt
- c) D. R. Gadgil
- d) Motilal Nehru

ANS: A

Explanation: The Poverty Line

- In pre-independent India, Dadabhai Naoroji was the first to discuss the concept of a 'Poverty Line'.
- He used the menu for a prisoner and used appropriate prevailing prices to arrive at what may be called 'jail cost of living'.
- However, only adults stay in jail whereas, in an actual society, there are children too. He, therefore, appropriately adjusted this cost of living to arrive at the poverty line.
- For this adjustment, he assumed that one-third population consisted of children and half of them consumed very little while the other half consumed half of the adult diet. This is how he arrived at the factor of three-fourths: $(1/6)$ (Nil) + $(1/6)$ (Half) + $(2/3)$ (Full) = $(3/4)$ (Full).
- The weighted average of consumption of the three segments gives the average poverty line, which comes out to be three-fourth of the adult jail cost of living.

Source: Ramesh Singh

Q.9) Which of the following committee emphasized on the small scale Industries for promoting rural development in India?

- a) Karve Committee
- b) S.L. Kapur Committee
- c) Abid Hussain Committee
- d) S.S. Kohli Committee

ANS: A

Explanation: Karve Committee

- A committee on the village and small scale industries were set up by Planning Commission (now NITI AYOOG) in 1955. So it is also being called the Village and Small Scale Industries Committee or Karve Committee after its head Dattatreya Gopal Karve.
- It was set up for the growth and development of small scale industries and rural development.

Small- Scale Industry

- A 'small-scale industry' is defined with reference to the maximum investment allowed on the assets of a unit.
- Small-scale industries are more 'labor-intensive' i.e., they use more labour than the large-scale industries and, therefore, generate more employment. But these industries cannot compete with big industrial firms.
- For this purpose, the production of a number of products was reserved for the small-scale industry.
- They were also given concessions such as lower excise duty and bank loans at lower interest rates.

Source: Ramesh Singh

Q.10) An ad-valorem duty is a tax on the basis of:

- a) Advertisement expenditure
- b) Value of a transaction
- c) Unit of the commodity
- d) None of the above

ANS: B

Explanation: Ad - Valorem Duty

- An ad valorem tax is a tax whose amount is based on the value of a transaction or of property.
- It is typically imposed at the time of a transaction, as in the case of a sales tax or value-added tax (VAT).
- An ad valorem tax may also be imposed annually, as in the case of a real or personal property tax, or in connection with another significant event (e.g. inheritance tax, expatriation tax, or tariff).
- In some countries, stamp duty is imposed as an ad valorem tax.

Source: Sriram IAS

Polity

Q.1) Which of the following bodies is/are presided over by a non-member?

1. Lok Sabha
2. Rajya Sabha
3. Vidhan sabha

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) 1 and 2 only
- d) 1, 2 and 3 only

ANS: B

Explanation:

- Rajya Sabha Chairman: According to the Constitution of India, the Vice President is the Rajya Sabha Chairman. The Vice President of India shall be the ex officio Chairman of Upper House of the Parliament or Rajya Sabha as per the Articles 64 and 89(1). The Vice-President, as the Rajya Sabha Chairman, chairs over the meetings of the House.
- The pride and status of the House depends on the Chairman of the Rajya Sabha, as he is the accepted guardian of the Upper House of the Indian Parliament. The Rajya Sabha Chairman is the major spokesperson of the House and he/she also symbolizes the joint voice to the outer globe.
- It is the duty of the Chairman of Rajya Sabha to ensure that the proceedings of the House are conducted in a regimented method and are in harmony with the pertinent provisions of the Constitution of India. It is also his duty to ensure that the members of the Upper House get proper chance to ask questions and get proper reply.
- The Rajya Sabha Chairman does not have the power to vote in any matters of the House. He can only put vote when there is a tie. The decisions of the Chairman Rajya Sabha cannot be ignored or criticized. The Chairman is also not bound to show reasons for any of his decisions. The act of protesting against the ruling of the Chairman is regarded as a contempt of Court.

Source: Laxmikanth

Q.2) Who among the following are appointed by the president of India?

1. The Chairman of Rajya Sabha
2. The chief Justice of India
3. Governor of states

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 2 only

ANS: C

Explanation:

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Article 53(1) vests the executive power of the union in the president. All executive actions of the Government of India and all contracts and assurances of the property are made by the Government of India are formally taken in the name in president.

Appointments made by president: President of India makes appointment to other constitutional officers and other important members of union government. These include:

- Prime Minister
- Other ministers on advice of Prime Minister
- Chief Justice of India
- Other Judges of Supreme Court on advice of the Chief Justice
- Chief Justice and other judges of high courts
- Chairman and other members of UPSC and Joint Public Service Commissions
- Attorney General of India
- Comptroller and Auditor General of India
- Chief Election Commissioner and other members of election commission
- Governors of states
- Administrators of Union Territories
- Chairman and members of National Commission of Scheduled Caste
- Chairman and members of National Commission of Scheduled Tribes
- Finance Commission chairman and members
- Central Chief Information Commissioner
- Central Vigilance Commissioner
- Chairperson of National Human Rights Commission
- Union Lokpal Chairman and its members on recommendation of selection committee
- At the same time, also note that:
- Chairperson of National Commission of Women is not appointed by President but by Central Government.
- Solicitor General is NOT appointed by President. His appointment is done by Central Government.
- The chairman and member of state public service commissions are although appointed by Governor, the removal of any of them (chairman or members) will be done by president.

Source: Laxmikanth

Q.3) Which among the following statement is correct about National Commission for Safai Karamcharis (NCSK)?

- a) It is statutory body.
- b) It is a non-statutory body.
- c) It is a constitutional body.
- d) Both A and C are correct.

ANS: B

Explanation: National Commission for Safai Karamcharis (NCSK):

It acts as a Non-Statutory body of the Ministry of Social Justice and Empowerment whose tenure is extended from time to time through Government Resolutions.

Functions:

- Recommend government regarding specific programmes for welfare of Safai Karamcharis
- Monitor the implementation of Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.

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- According to data from the National Commission for Safai Karamcharis (NCSK), of the 926 sewer deaths, families of 172 victims are yet to receive compensation. Gujarat and Maharashtra lag behind the most in compensation for sewer deaths.

Source: Laxmikanth

Q.4) Dhar Commission and JVP committee are related to which of the following?

- a) States Reorganization
- b) Fundamental Rights
- c) Constitutional Reforms
- d) Directive Principles of State Policy

ANS: A

Explanation:

- The integration of princely states with the rest of India has purely an ad hoc arrangement. There has been a demand from different regions, particularly South India, for reorganisation of states on linguistic basis.
- Accordingly, in June 1948, the Government of India appointed the Linguistic Provinces Commission under the chairmanship of S K Dhar to examine the feasibility of this.
- The commission submitted its report in December 1948 and recommended the reorganisation of states on the basis of administrative convenience rather than linguistic factor.
- This created much resentment and led to the appointment of another Linguistic Provinces Committee by the Congress in December 1948 itself to examine the whole question afresh. It consisted of Jawaharlal Nehru, Vallabhbhai Patel and Pattabhi Sitaramayya and hence, was popularly known as JVP Committee.

Source: Laxmikanth

Q.5) Which of the following given statements are Socialistic Principles of Directive Principles of State Policy (DPSP)?

1. To promote equal justice and to provide free legal aid to the poor
2. To secure the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement
3. To promote voluntary formation, autonomous functioning, democratic control and professional management of co-operative societies

Select the correct answer using the codes given below:

- a) 1 only
- b) 1 and 3 only
- c) 1, 2 and 3
- d) 1 and 2 only

ANS: D

Explanation: These principles reflect the ideology of socialism. They lay down the framework of a democratic socialist state, aim at providing social and economic justice, and set the path towards welfare state. They direct the state:

- To promote the welfare of the people by securing a social order permeated by justice—social, economic and political—and to minimize inequalities in income, status, facilities and opportunities⁴ (Article 38).

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- To secure
 - the right to adequate means of livelihood for all citizens;
 - the equitable distribution of material resources of the community for the common good;
 - prevention of concentration of wealth and means of production;
 - equal pay for equal work for men and women;
 - preservation of the health and strength of workers and children against forcible abuse; and
 - opportunities for healthy development of children⁵ (Article 39).
- To promote equal justice and to provide free legal aid to the poor⁶ (Article 39 A).
- To secure the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement (Article 41).
- To make provision for just and humane conditions of work and maternity relief (Article 42).
- To secure a living wage, a decent standard of life and social and cultural opportunities for all workers (Article 43).
- To take steps to secure the participation of workers in the management of industries⁸ (Article 43 A).
- To raise the level of nutrition and the standard of living of people and to improve public health (Article 47).

Source: Laxmikanth

Q.6) Consider the following statements with respect to objectives of “Provisions of the Panchayats (Extension to the Scheduled Areas) Act” 1996:

1. To extend the provisions of Part IX of the Constitution relating to the panchayats to the scheduled areas with certain modifications
2. To provide self-rule for the bulk of the tribal population
3. To protect forests and conservation of environment

Which of the statements given above is/are correct?

- a) 1 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation:

- The provisions of Part IX of the constitution relating to the Panchayats are not applicable to the Fifth Schedule areas. However, the Parliament may extend these provisions to such areas, subject to such exceptions and modifications as it may specify.
- Under this provision, the Parliament has enacted the “Provisions of the Panchayats (Extension to the Scheduled Areas) Act”, 1996, popularly known as the PESA Act or the Extension Act. At present (2016), ten states have Fifth Schedule Areas.
- These are: Andhra Pradesh, Telangana, Chhatisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Rajasthan. All the ten states have enacted requisite compliance legislations by amending the respective Panchayati Raj Acts.

The objectives of the PESA Act are as follows:

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- To extend the provisions of Part IX of the Constitution relating to the panchayats to the scheduled areas with certain modifications
- To provide self-rule for the bulk of the tribal population
- To have village governance with participatory democracy and to make the gram sabha a nucleus of all activities
- To evolve a suitable administrative framework consistent with traditional practices
- To safeguard and to preserve the traditions and customs of tribal communities
- To empower panchayats at the appropriate levels with specific powers conducive to tribal requirements
- To prevent panchayats at the higher level from assuming the powers and authority of panchayats at the lower level of the gram sabha

Source: Laxmikanth

Q.7) Consider the following statements with respect to the Attorney General of India:

1. He is the highest law officer in the country
2. The Attorney General (AG) is appointed by the Chief Justice of India

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation:

- The Constitution (Article 76) has provided for the office of the Attorney General for India. He is the highest law officer in the country.
- The Attorney General (AG) is appointed by the president. He must be a person who is qualified to be appointed a judge of the Supreme Court. In other words, he must be a citizen of India and he must have been a judge of some high court for five years or an advocate of some high court for ten years or an eminent jurist, in the opinion of the president.
- The term of office of the AG is not fixed by the Constitution. Further, the Constitution does not contain the procedure and grounds for his removal. He holds office during the pleasure of the president.
- This means that he may be removed by the president at any time. He may also quit his office by submitting his resignation to the president. Conventionally, he resigns when the government (council of ministers) resigns or is replaced, as he is appointed on its advice.

Source: Laxmikanth

Q.8) Consider the following statements with respect to Comptroller and Auditor General of India (CAG):

1. He is the guardian of the public purse and controls the entire financial system of the country
2. The CAG is appointed by the Prime Minister

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation:

- The Constitution of India (Article 148) provides for an independent office of the Comptroller and Auditor General of India (CAG).
- He is the head of the Indian Audit and Accounts Department. He is the guardian of the public purse and controls the entire financial system of the country at both the levels—the Centre and the state.
- His duty is to uphold the Constitution of India and laws of Parliament in the field of financial administration. The CAG is appointed by the president of India by a warrant under his hand and seal.

Source: Laxmikanth

Q.9) Consider the following statements with respect to Finance Commission:

1. The Finance Commission consists of a chairman and four other members to be appointed by the president.
2. They are eligible for reappointment.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation:

- The Finance Commission consists of a chairman and four other members to be appointed by the president.
- They hold office for such period as specified by the president in his order. They are eligible for reappointment.
- The Constitution authorizes the Parliament to determine the qualifications of members of the commission and the manner in which they should be selected.
- Accordingly, the Parliament has specified the qualifications of the chairman and members of the commission.

Source: Laxmikanth

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Q.10) In which of the following case, the Supreme Court held that ‘the Indian Constitution is founded on the bedrock of the balance between the Fundamental Rights and the Directive Principles’?

- a) Keshavananda Bharathi Case 1973
- b) Menaka Gandhi Case 1978
- c) Minerva Mills Case 1980
- d) None of the above

ANS: C

Explanation:

- In the Minerva Mills case (1980), the Supreme Court held that ‘the Indian Constitution is founded on the bedrock of the balance between the Fundamental Rights and the Directive Principles’.

Source: Laxmikanth

Geography

Q.1) Which of the following statement about Nebular Hypothesis is/are correct?

1. It was given by philosopher Immanuel Kant.
2. As per this hypothesis, the planets were formed out of a cloud of material associated with a youthful sun, which was slowly rotating.

Select the correct answer using the codes given below:

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: C

Explanation: Origin of the Earth

- A large number of hypotheses were put forth by different philosophers and scientists regarding the origin of the earth.
- One of the earlier and popular arguments was by German philosopher Immanuel Kant. Mathematician Laplace revised it in 1796. It is known as Nebular Hypothesis. The hypothesis considered that the planets were formed out of a cloud of material associated with a youthful sun, which was slowly rotating.
- Later in 1900, Chamberlain and Moulton considered that a wandering star approached the sun. As a result, a cigar-shaped extension of material was separated from the solar surface.
- As the passing star moved away, the material separated from the solar surface continued to revolve around the sun and it slowly condensed into planets.
- Sir James Jeans and later Sir Harold Jeffrey supported this argument. At a later date, the arguments considered of a companion to the sun to have been coexisting. These arguments are called binary theories.
- In 1950, Otto Schmidt in Russia and Carl Weizsacker in Germany somewhat revised the 'nebular hypothesis', though differing in details. They considered that the sun was surrounded by solar nebula containing mostly the hydrogen and helium along with what may be termed as dust.
- The friction and collision of particles led to formation of a disk-shaped cloud and the planets were formed through the process of accretion.

Source: NCERT Class 11

Q.2) Which of the following statement is/are correct?

1. A galaxy starts to form by accumulation of oxygen gas in the form of a very large cloud called nebula.
2. Galaxies spread over vast distances that are measured in thousands of light-years.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: The Star Formation

- The distribution of matter and energy was not even in the early universe. These initial density differences gave rise to differences in gravitational forces and it caused the matter to get drawn together.
- These formed the bases for development of galaxies.
- A galaxy contains a large number of stars. Galaxies spread over vast distances that are measured in thousands of light-years.
- The diameters of individual galaxies range from 80,000-150,000 light years. A galaxy starts to form by accumulation of hydrogen gas in the form of a very large cloud called nebula.
- Eventually, growing nebula develops localised clumps of gas. These clumps continue to grow into even denser gaseous bodies, giving rise to formation of stars.
- The formation of stars is believed to have taken place some 5-6 billion years ago.

Source: NCERT Class 11

Q.3) The gas cloud starts getting condensed and the matter around the core develops into small-rounded objects. These small-rounded objects by the process of cohesion develop into what is called as?

- a) Black Hole
- b) Star
- c) Planet
- d) Planetesimals

ANS: D

Explanation: Formation of Planets

The following are considered to be the stages in the development of planets:

- The stars are localised lumps of gas within a nebula. The gravitational force within the lumps leads to the formation of a core to the gas cloud and a huge rotating disc of gas and dust develops around the gas core.
- In the next stage, the gas cloud starts getting condensed and the matter around the core develops into small-rounded objects.
- These small-rounded objects by the process of cohesion develop into what is called planetesimals. Larger bodies start forming by collision, and gravitational attraction causes the material to stick together. Planetesimals are a large number of smaller bodies.

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- In the final stage, these large number of small planetesimals accrete to form a fewer large bodies in the form of planets.

Source: NCERT Class 11

Q.4) With respect to terrestrial and jovian planets is/are not correct?

1. Jovian planets were formed in the close vicinity of the parent star where it was too warm for gases to condense to solid particles.
2. The terrestrial planets are smaller and their lower gravity could not hold the escaping gases.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: The difference between terrestrial and jovian planets can be attributed to the following conditions:

- The terrestrial planets were formed in the close vicinity of the parent star where it was too warm for gases to condense to solid particles. Jovian planets were formed at quite a distant location.
- The solar wind was most intense nearer the sun; so, it blew off lots of gas and dust from the terrestrial planets. The solar winds were not all that intense to cause similar removal of gases from the Jovian planets.
- The terrestrial planets are smaller and their lower gravity could not hold the escaping gases.

Source: NCERT Class 11

Q.5) Consider the following statement about Earth:

1. From the outermost end of the atmosphere to the centre of the earth, the material that exists is uniform.
2. The atmospheric matter has the most density.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: Evolution of the Earth

- The planet earth initially was a barren, rocky and hot object with a thin atmosphere of hydrogen and helium. This is far from the present day picture of the earth.
- Hence, there must have been some events– processes, which may have caused this change from rocky, barren and hot earth to a beautiful planet with ample amount of water and conducive atmosphere favouring the existence of life.
- In the following section, you will find out how the period, between the 4,600 million years and the present, led to the evolution of life on the surface of the planet.

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- The earth has a layered structure. From the outermost end of the atmosphere to the centre of the earth, the material that exists is not uniform.
- The atmospheric matter has the least density. From the surface to deeper depths, the earth's interior has different zones and each of these contains materials with different characteristics.

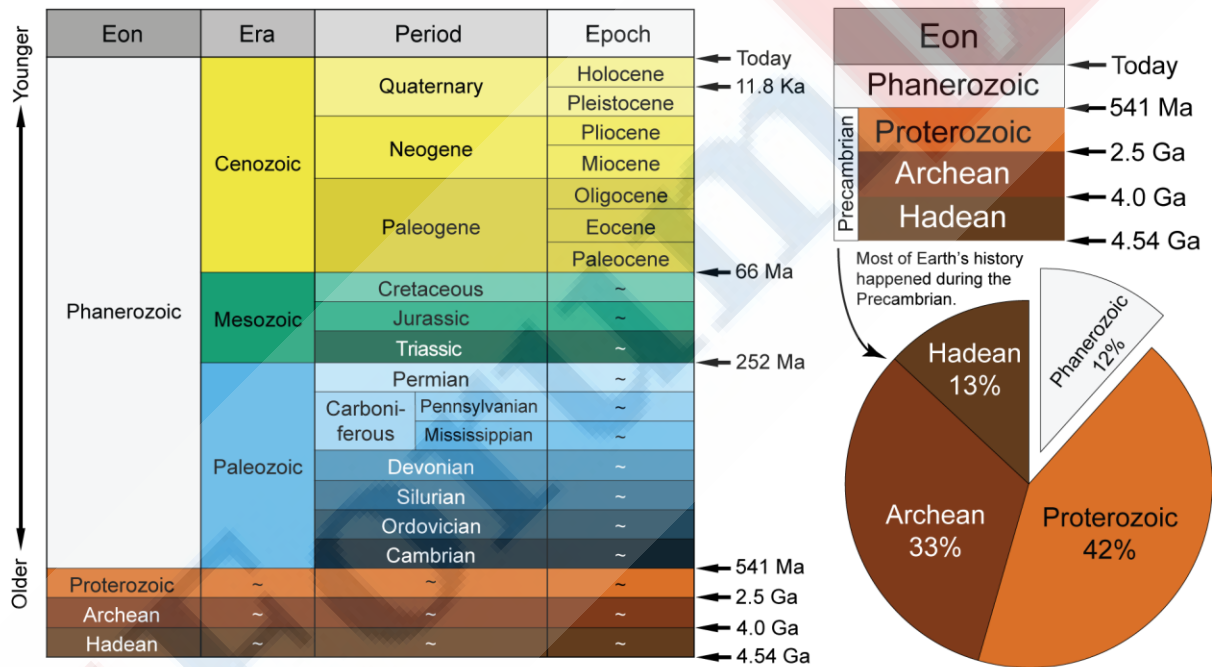
Source: NCERT Class 11

Q.6) Which among the following has the shortest duration?

- Eons
- Period
- Era
- Epoch

ANS: D

Explanation: Geological Time scale



Source: NCERT Class 11

Q.7) Consider the following phenomenon:

1. Degassing
2. Photosynthesis
3. Solar Winds

Which of the above is/are related to the formation or modification of the present atmosphere?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: D

Explanation: Evolution of Atmosphere and Hydrosphere:

- The present composition of earth's atmosphere is chiefly contributed by nitrogen and oxygen.
- There are three stages in the evolution of the present atmosphere. The first stage is marked by the loss of primordial atmosphere.
- In the second stage, the hot interior of the earth contributed to the evolution of the atmosphere.
- Finally, the composition of the atmosphere was modified by the living world through the process of photosynthesis.
- The early atmosphere, with hydrogen and helium, is supposed to have been stripped off as a result of the solar winds. This happened not only in case of the earth, but also in all the terrestrial planets, which were supposed to have lost their primordial atmosphere through the impact of solar winds.
- During the cooling of the earth, gases and water vapour were released from the interior solid earth. This started the evolution of the present atmosphere. The early atmosphere largely contained water vapour, nitrogen, carbon dioxide, methane, ammonia and very little of free oxygen.
- The process through which the gases were outpoured from the interior is called degassing. Continuous volcanic eruptions contributed water vapour and gases to the atmosphere. As the earth cooled, the water vapour released started getting condensed.
- The carbon dioxide in the atmosphere got dissolved in rainwater and the temperature further decreased causing more condensation and more rains. The rainwater falling onto the surface got collected in the depressions to give rise to oceans.
- The earth's oceans were formed within 500 million years from the formation of the earth. This tells us that the oceans are as old as 4,000 million years. Sometime around 3,800 million years ago, life began to evolve.
- However, around 2,500-3,000 million years before the present, the process of photosynthesis got evolved. Life was confined to the oceans for a long time.
- Oceans began to have the contribution of oxygen through the process of photosynthesis.
- Eventually, oceans were saturated with oxygen, and 2,000 million years ago, oxygen began to flood the atmosphere.

Source: NCERT Class 11

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Q.8) Which of the following statement is/are correct?

1. Life started from multi-cellular organisms.
2. The record of life that existed on this planet in different periods is found in rocks in the form of fossils.

Select the correct answer using the codes given below:

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: B

Explanation: Origin of Life:

- The last phase in the evolution of the earth relates to the origin and evolution of life. It is undoubtedly clear that initially the earth or even the atmosphere of the earth was not conducive for the development of life.
- Modern scientists refer to the origin of life as a kind of chemical reaction, which first generated complex organic molecules and assembled them. This assemblage was such that they could duplicate themselves converting inanimate matter into living substance.
- The record of life that existed on this planet in different periods is found in rocks in the form of fossils. The microscopic structures closely related to the present form of blue algae have been found in geological formations much older than some 3,000 million years. It can be assumed that life began to evolve sometime 3,800 million years ago.
- The summary of evolution of life from unicellular bacteria to the modern man is given in the Geological Time Scale.

Eon	Era	Period	Epoch	MYA	Life Forms	
Phanerozoic	Cenozoic (CZ)	Quaternary (Q)	Holocene (H)	0.01	Extinction of large mammals and birds Modern humans	
			Pleistocene (PE)	2.6		
		Tertiary (T)	Neogene (N)	Pliocene (PL)	5.3	Spread of grassy ecosystems
			Paleogene (PG)	Miocene (MI)	23.0	
				Oligocene (OL)	33.9	
			Eocene (E)	56.0		
	Mesozoic (MZ)	Cretaceous (K)	Paleocene (EP)	66.0	Mass extinction Early primates	
				145.0		Placental mammals Early flowering plants
				201.3		
		Jurassic (J)	Age of Reptiles	251.9	Mass extinction First dinosaurs; first mammals Flying reptiles	
		Triassic (TR)				
		Paleozoic (PZ)	Permian (P)	Age of Amphibians	298.9	Coal-forming swamps Sharks abundant First reptiles
	323.2					
	358.9					
	Devonian (D)		Fishes	419.2	Mass extinction First amphibians First forests (evergreens)	
				443.8		
	Silurian (S)		Marine Invertebrates	485.4	First land plants Mass extinction Primitive fish Trilobite maximum Rise of corals	
				541.0		
	Proterozoic	Archean	Precambrian (PC, W, X, Y, Z)	4000	Complex multicelled organisms Simple multicelled organisms Early bacteria and algae (stromatolites)	
2500						
4600						
Hadean				4600	Formation of the Earth	

Source: NCERT Class 11

Q.9) Life-form on earth originated firstly in which of the following?

- a) Air
- b) Mountain
- c) Water
- d) Soil

ANS: C

Explanation:

- With an environment devoid of oxygen and high in methane, for much of its history Earth would not have been a welcoming place for animals.
- The earliest life forms we know of were microscopic organisms (microbes) that left signals of their presence in rocks about 3.7 billion years old. The signals consisted of a type of carbon molecule that is produced by living things.
- Evidence of microbes was also preserved in the hard structures (“stromatolites”) they made, which date to 3.5 billion years ago. Stromatolites are created as sticky mats of microbes trap and bind sediments into layers. Minerals precipitate inside the layers, creating durable structures even as the microbes die off.

Source: NCERT Class 11

Q.10) Who among the following was the first one to suggest that the Earth and the Moon forms a single rapidly rotating body?

- a) Sir George
- b) Sir Moulton
- c) Sir Chamberlain’
- d) Immanuel Kant

ANS: A

Explanation: The Moon:

- The moon is the only natural satellite of the earth. Like the origin of the earth, there have been attempts to explain how the moon was formed. In 1838, Sir George Darwin suggested that initially, the earth and the moon formed a single rapidly rotating body.
- The whole mass became a dumb-bell-shaped body and eventually it broke. It was also suggested that the material forming the moon was separated from what we have at present the depression occupied by the Pacific Ocean.
- However, the present scientists do not accept either of the explanations. It is now generally believed that the formation of moon, as a satellite of the earth, is an outcome of ‘giant impact’ or what is described as “the big splat”.
- A body of the size of one to three times that of mars collided into the earth sometime shortly after the earth was formed. It blasted a large part of the earth into space. This portion of blasted material then continued to orbit the earth and eventually formed into the present moon about 4.44 billion years ago.

Source: NCERT Class 11

Environment

Q.1) Consider the following statements about International Solar Alliance (ISA):

1. It is a special platform for mutual cooperation among solar resource rich countries lying above and below Tropic of Cancer and Tropic of Capricorn respectively.
2. The ISA secretariat will be set up in National Institute of Solar Energy, Gurgaon.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: International Solar Alliance:

- International Solar Alliance (ISA) is launched at the CoP21 Climate Conference in Paris on 30th November as a special platform for mutual cooperation among 121 solar resource rich countries lying fully or partially between Tropic of Cancer and Tropic of Capricorn.
- The alliance is dedicated to address special energy needs of ISA member countries.
- International Agency for Solar Policy and Application (IASPA) will be the formal name of International Solar Alliance.
- The ISA secretariat will be set up in National Institute of Solar Energy, Gurgaon.

Objectives

1. to force down prices by driving demand;
2. to bring standardization in solar technologies
3. to foster research and development.

Prime Minister coined the new term “Surya Putra” for all the nations which fall between Tropic of Cancer and Tropic of Capricorn, and which have been invited to join the alliance. The other term used for these countries is “Sunshine Countries”.

Source: ShankarIAS

Q.2) Consider the following statements about International Renewable Energy Agency (IRENA):

1. It is a non-governmental organisation that supports countries in their transition to a sustainable energy future.
2. It is headquartered in Abu Dhabi.

Which of the statements given above is/are not correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: International Renewable Energy Agency (IRENA):

- IRENA has 150 member nations with Headquarters in Abu Dhabi.

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- The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries
- in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy.
- IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.

Source: ShankarIAS

Q.3) The process in which the organic material is heated in the absence of air until the molecules thermally break down to become a gas comprising smaller molecules is known as?

- a) Combustion
- b) Biomethanation
- c) Pyrolysis
- d) None of the above

ANS: C

Explanation: Pyrolysis/Gasification:

- Pyrolysis is a process of chemical decomposition of organic matter brought about by heat.
- In this process, the organic material is heated in the absence of air until the molecules thermally break down to become a gas comprising smaller molecules (known collectively as syngas).
- Gasification can also take place as a result of partial combustion of organic matter in the presence of a restricted quantity of oxygen or air.
- The gas so produced is known as producer gas. The gases produced by pyrolysis mainly comprise carbon monoxide (25%), hydrogen and hydrocarbons (15%), and carbon dioxide and nitrogen (60%). The next step is to 'clean' the syngas or producer gas. Thereafter, the gas is burned in internal combustion (IC) engine generator sets or turbines to produce electricity.

Source: ShankarIAS

Q.4) Consider the following statements about Geothermal Energy:

1. It refers to harnessing of the vast reservoir of heat stored in the earth's inner core.
2. Heat energy is produced mostly from the decay of naturally radioactive materials.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Geothermal Energy:

- Geothermal generation refers to harnessing of the geothermal energy or the vast reservoir of heat stored in the earth's inner core.

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- Below the earth's crust, there is a layer of hot and molten rock called 'magma'. Heat is continually produced there, mostly from the decay of naturally radioactive materials such as uranium and potassium.

Source: ShankarIAS

Q.5) Consider the following statements with respect to 20th Livestock census:

1. According to the census, Stray cattle in the country increased marginally.
2. Census conducted for every 2 years.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation:

- The number of stray cattle in the country has marginally come down to 50.22 lakh in 2019 from 51.88 lakh in 2012 — a decline of 3.2 per cent — according to the latest data of the 20th Livestock Census released by the Ministry of Animal Husbandry, Dairying and Fisheries.
- While the data shows a decline at the national level, there is substantial increase in stray cattle population in states such as Uttar Pradesh (17.34 per cent), Madhya Pradesh (95 per cent), Rajasthan (34.48 per cent), Gujarat (17.59 per cent), Chhattisgarh (33.93 per cent) and Punjab (38.69 per cent) in 2019 in comparison to 2012.
- However, in some states, a sharp decline has been registered in the stray cattle population. These include Odisha (86.68 per cent decline), West Bengal (73.59 per cent), Bihar (66.54 per cent) and Tamil Nadu (23.95 per cent). Census Conducted Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry and Dairying. Conducted quinquennially (every five years) since 1919-20. Covers all domesticated animals and its headcounts.

Source: <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1813802>

Q.6) In the earth's atmosphere, which of the following have the property of absorbing the heat and contribute to the warming of atmosphere?

1. Carbon Dioxide
2. Soot
3. Water Vapour

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: C

Explanation:

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- Greenhouse gas, any gas that has the property of absorbing infrared radiation (net heat energy) emitted from Earth's surface and reradiating it back to Earth's surface, thus contributing to the greenhouse effect.
- Carbon dioxide, methane, and water vapour are the most important greenhouse gases. (To a lesser extent, surface-level ozone, nitrous oxides, and fluorinated gases also trap infrared radiation.)
- Greenhouse gases have a profound effect on the energy budget of the Earth system despite making up only a fraction of all atmospheric gases.
- Concentrations of greenhouse gases have varied substantially during Earth's history, and these variations have driven substantial climate changes at a wide range of timescales. In general, greenhouse gas concentrations have been particularly high during warm periods and low during cold periods.
- These gases have a high capacity for absorbing infrared radiation or occur in significant quantities, whereas others have considerably lower capacities for absorption or occur only in trace amounts.

Source: <https://climate.mit.edu/ask-mit/how-do-greenhouse-gases-trap-heat-atmosphere#:~:text=Greenhouse%20gas%20molecules%20in%20the,raises%20the%20planet's%20average%20temperature>.

Q.7) Which of the following is definition of a 'cold day' as per India Meteorological Department (IMD)?

- a) A day when maximum temperature is at least 6.5°C below normal.
- b) A day when the minimum temperature is at least 6.5°C above normal.
- c) A day when the maximum temperature during the day is at least 4.5°C above normal.
- d) A day when the maximum temperature during the day is at least 4.5°C below normal.

ANS: D

Explanation:

- The IMD is the national meteorological service of the country and it is the chief government agency dealing in everything related to meteorology, seismology and associated subjects. It was formed in 1875. The IMD is under the Ministry of Earth Sciences, Government of India.
- Cold Day: A cold-day condition is said to prevail when the maximum temperature during the day is at least 4.5°C below normal.
- Severe Cold Day: If the maximum temperature is at least 6.5°C below normal, it is classified as a severe cold day.
- Cold wave: Cold wave is characterized by a rapid and marked fall of temperature. The term 'cold' describes an unusual fall in temperature that is triggered by the transport of cold air masses into a specific area.
- The "wave" in cold wave is apparent in the upper-air flow (the jetstream), which is usually amplified into a strong ridge-trough pattern during a major cold outbreak. Cold waves affect much larger areas than blizzards, ice storms, and other winter hazards.

Source: <https://economictimes.indiatimes.com/news/india/cold-day-cold-wave-conditions-to-grip-northwest-india-this-week-imd/articleshow/89094938.cms?from=mdr>

Q.8) Consider the following statements about 'Carbon Credit':

1. A carbon credit is a tradable permit.
2. The holder of the credit has the right to emit ten ton of carbon dioxide or an equivalent of another greenhouse gas.
3. The main goal for the creation of carbon credits is the reduction of emissions of carbon dioxide and other greenhouse gases.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 1 and 3 only
- c) 2 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation:

- A carbon credit is a tradable permit or certificate that provides the holder of the credit the right to emit one ton of carbon dioxide or an equivalent of another greenhouse gas.
- The main goal for the creation of carbon credits is the reduction of emissions of carbon dioxide and other greenhouse gases from industrial activities to reduce the effects of global warming.
- Carbon credits are market mechanisms of the minimization of greenhouse gases emission. The introduction of carbon credit was ratified in the Kyoto Protocol.
- The Paris Agreement validates the application of carbon credits to reduce emissions of the greenhouse gases and sets the provisions for the further facilitation of the carbon credits markets.

Types of Carbon Credits

There are two types of the carbon credits:

- **Voluntary emissions reduction (VER):** A carbon offset that is exchanged in the over-the-counter or voluntary market for credits.
- **Certified emissions reduction (CER):** Emission units (or Carbon credits) created through a regulatory framework with the purpose of offsetting a project's emission. The main difference between the two is that there is a third party certifying body that regulates the CER as opposed to the VER.

Source: https://www.business-standard.com/podcast/current-affairs/what-are-carbon-credits-122033100080_1.html

Q.9) The Cartagena Protocol on Biosafety is related to which of the following?

- a) To ensure the safe handling, transport and use of living modified organisms (LMOs)
- b) The fair and equitable sharing of benefits arising from the utilization of genetic resources.
- c) To Abate Acidification, Eutrophication and Ground-level Ozone
- d) To reduce Chlorofluro Carbons (CFCs)

ANS: A

Explanation:

- The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.

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- It was adopted on 29 January 2000 and entered into force on 11 September 2003.
- The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology.
- It establishes an advance informed agreement (AIA) procedure for ensuring that countries are provided with the information necessary to make informed decisions before agreeing to the import of such organisms into their territory.
- The Protocol contains reference to a precautionary approach and reaffirms the precaution language in Principle 15 of the Rio Declaration on Environment and Development. The Protocol also establishes a Biosafety Clearing-House to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

Source: <https://bch.cbd.int/protocol>

Q.10) Which of the following International institution released the Emissions Gap report?

- a) UNDP
- b) UNFCCC
- c) UNEP
- d) Global Environment Facility

ANS: C

Explanation:

- As the world strives to cut greenhouse gas emissions and limit climate change, it is crucial to track progress towards globally agreed climate goals.
- For a decade, UNEP's Emissions Gap Report has compared where greenhouse gas emissions are heading against where they need to be, and highlighted the best ways to close the gap.
- The report presents the latest data on the expected gap in 2030 for the 1.5°C and 2°C temperature targets of the Paris Agreement.
- It considers different scenarios, from no new climate policies since 2005 to full implementation of all national commitments under the Paris Agreement. For the first time, it looks at how large annual cuts would need to be from 2020 to 2030 to stay on track to meeting the Paris goals.

Source: <https://www.unep.org/resources/emissions-gap-report-2021>

History

Q.1) Consider the following pairs:

Term	Definition
1. Upanishads	Philosophical Enquires
2. Brahmana	Forest Texts
3. Samhita	Vedic Hymns

How many of the above given pairs is/are correctly matched?

- a) One pair only
- b) Two pairs only
- c) All three pairs
- d) None of the above

ANS: B

Explanation: Literature of the Vedic Age:

- The main collections of Vedic hymns are called samhitas. The Rig Vedicsamhita is the earliest text.
- The Rig Veda is dated to between 1500 and 1000 BCE. The Rig Veda contains 10 books. Books 2 to 7 are the earliest and the Books 1, 8, 9 and 10 are assigned to a later period.
- Samhitas are ritualistic texts, and they explain the social and religious importance of rituals. Each samhita has added texts called brahmanas, which have commentaries on the hymns and rituals.
- Each brahmana has an aranyaka (forest text) and an upanishad. The aranyakas contain mystical ritual instructions to be undertaken in secret by the sages who live in the forests. Upanishads deal with philosophical enquiries.
- The Yajur, Sama and Atharva Vedas are dated to a slightly later period. The samhitas of the Sama, Yajur and Atharva Vedas, and the brahmanas, aranyakas and upanishads attached to the Vedas are the Late Vedic texts.
- The Sama Veda was composed in musical notes which are considered to constitute the basis of Indian music. The Yajur Veda has rituals and hymns. The Atharva Veda contains charms and magical spells.

Source: Tamil Nadu Board Class 11

Q.2) Which of the following statement about Atharva Veda is correct?

- a) It is composed in Musical Notes.
- b) It contains detailed rituals and hymns.
- c) It is the earliest vedic text.
- d) It contains charms and magical spells.

ANS: D

Explanation: Vedic Literature:

- The word 'Veda' is derived from the root 'vid', which means to know. In other words, the term 'Veda' signifies 'superior knowledge'. The Vedic literature consists of the four Vedas – Rig, Yajur, Sama and Atharva.

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- The Rig Veda is the earliest of the four Vedas and it consists of 1028 hymns. The hymns were sung in praise of various gods. The Yajur Veda consists of various details of rules to be observed at the time of sacrifice.
- The Sama Veda is set to tune for the purpose of chanting during sacrifice. It is called the book of chants and the origins of Indian music are traced in it. The Atharva Veda contains details of rituals.

Source: Tamil Nadu Board Class 11

Q.3) Which of the following statement about Ochre Coloured Pottery Ware Culture is/are correct?

1. It is also known as 'Copper Hoard Culture'.
2. It is an urban culture.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Ochre Coloured Pottery Ware Culture:

- Ochre Coloured Pottery Ware culture is found in northern India dating to the Chalcolithic period. The OCP pottery has red slip and appears ochre in colour (the ochre colour comes off when the pottery is touched) and hence, it is called Ochre Coloured Pottery.
- It has black painted designs. The OCP comes in the form of jars, storage jars, bowls, and basins. The OCP culture dates to 2600- 1200 BCE and is found in the IndoGangetic plain and may have had some associations with early Vedic culture.
- The OCP culture is seen as an impoverished Harappan culture and some scholars see it as unrelated to the Harappan culture. The OCP sites produced copper figures and objects and therefore it is also known as "copper hoard culture."
- It is a rural culture and has evidence of the cultivation of rice, barley, and legumes. They also had pastoralism with evidence of cattle, sheep, goats, pigs, horses, and dogs. The villages had wattle-and-daub houses. They used copper and terracotta ornaments. Animal figurines have also been found.

Source: Tamil Nadu Board Class 11

Q.4) Iron Age in North India coincides with which of the following?

- a) Painted Grey Ware Culture
- b) Ochre Coloured Pottery Ware Culture
- c) Black and Red Ware Culture
- d) Northern Black Polished ware culture

ANS: A

Explanation: Iron Age in North India:

- The Iron Age in North India coincides with the painted Grey Ware culture. The painted grey ware is dated to from 1100 to 800 BCE. More than 1000 sites have been identified with painted grey ware pottery in northern India, with a major concentration in the

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Ganga-Yamuna valley. These ceramics succeeded the Black and Red Ware Culture in the eastern Ganga valley and Central India.

- The pottery was fine grey in colour with painted geometric designs. The painted grey ware laid the foundation of the early political formations. It correlates with the Kuru-Panchala kingdom known from the Vedic texts. The Painted Grey Ware cultural phase is followed by Northern Black Polished Ware culture (NBPW), which is associated with the Mahajanapada and Mauryan periods.

Source: Tamil Nadu Board Class 11

Q.5) Consider the following statements about Megalithic Sites in Tamil Nadu:

1. Kodumanal Site is located on the northern bank of Noyyal River.
2. The burial mounds at Adichanallur yielded only gold ornaments and has no evidence of stone beads.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Adichanallur:

The burial mound at Adichanallur yielded the following: „

- Urns and pottery of various kinds in large numbers. „
- Iron implements, including spades and weapons (daggers, swords, spears and arrows). Some stone beads and a few gold ornaments „
- Bronze objects representing the domestic animals such as buffalo, goat or sheep and cock, and wild animals like tiger, antelope and elephant. „
- Traces of cloth and wood. 166
- Paiyampalli is a village in Tirupathur taluk, Vellore district. The Archaeological Survey of India carried out an excavation in the 1960s and unearthed black and red ware pottery in this megalithic site. A large number of urn burials were also found in this region. The date of this culture, based on radio carbon dating, is 1000 BCE.
- Kodumanal, 40 km from Erode, is located on the northern bank of Noyyal River, a tributary of the Cauvery. A series of excavations were carried out during the 1980s and 1990s. The most recent was in 2012. In habitation trenches and megalithic burials of Kodumanal, the goods unearthed included pots, weapons, tools, ornaments, and beads, particularly carnelian, akin to those found at Mohenjodaro. Since carnelian was not known to this region in ancient times, it may have been brought to Kodumanal from outside.

Source: Tamil Nadu Board Class 11

Q.6) Which of the following statements about Rig Vedic Culture is/are correct?

1. Varna was the term used by Aryans to refer to colour and category.
2. The Dasas and Dasyus were conquered and treated as slaves.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Social Divisions:

- The Vedic people distinguished themselves from the non-Aryan people. Varna was the term used by Aryans to refer to colour and category. The Rig Veda refers to Arya varna and Dasa varna.
- The Dasas and Dasyus were conquered and treated as slaves. They came to be considered sudras in the later period. Social classes were classified as warriors, priests and common people.
- Sudras as a category of people appeared at the end of the Rig Vedic period. Slavery was common and slaves were given as gifts to the priests, but there is no reference to wage labour. Horse-drawn chariots and bronze objects were possessed by a few, suggesting social distinction.
- Vedic society was largely egalitarian initially, and social distinctions emerged later. According to the Purusha Sukta of the Rig Veda the various varnas emerged thus: Brahmanas from the mouth, the kshatriya from the arms, the vaisya from the thighs and the sudra from the feet of Purusha, when he was sacrificed.
- These social divisions are considered to have arisen towards the end of the early Vedic period. Various professional groups such as warriors, priests, cattle-keepers, farmers, barbers are also mentioned. Panis were itinerant traders or perhaps caravan traders. Panis are also seen as enemies in some verses.

Source: Tamil Nadu Board Class 11

Q.7) Consider the following pairs:

Term	Meaning
1. Kshetra	Field
2. Krishi	Farmer
3. Sita	Furrow created by ploughing
4. Yavam	Barley

How many pairs is/are correctly matched?

- a) One pair only
- b) Two pairs only
- c) Three pairs only
- d) All four pairs

ANS: B

Explanation: Economy: Agriculture

- Archaeological evidence points to the development of agriculture among the Rig Vedic people. The ploughshare is mentioned in the Rig Vedas.

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- The field was known as kshetra and the term krishi referred to ploughing. The terms langla and sura referred to plough and the term sita meant the furrow created by ploughing.
- Water for irrigation was probably drawn from wells by cattedriven water-lifts using pulleys. They had knowledge of different seasons, sowing, harvesting and thrashing. They cultivated barley (yavam) and wheat (godhuma).

Source: Tamil Nadu Board Class 11

Q.8) Which of the following pair is/are correctly matched?

Term	Used for
1. Ayas	Copper and Bronze
2. Nishka	Gold/Silver ornament
3. Takshan	Carpenters
4. Gavishthi	War

Select the correct answer using the codes given below:

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1, 3 and 4 only
- d) 1, 2, 3 and 4

ANS: D

Explanation: Pastoralism:

- Cattle rearing was an important economic activity for the Aryans, although they practiced agriculture. Cattle were considered wealth.
- The term for war in the Rig Veda was gavishthi which means search for cows (which is the contemporary term (goshti) for factions as well).
- The donations to the priests were mainly cows and women slaves but not land, which reveals the importance of pastoralism. There was no private property in land.

Craft Production

- The Rig Veda mentions artisans such as carpenters, chariot-makers, weavers and leather-workers. Copper metallurgy was one of the important developments of this period.
- The term ayas in the Rig Veda refers to copper and bronze. Karmara, smith, is mentioned in the Rig Veda. Likewise, there are references to siri or yarn, indicating spinning which was done by women and to carpenters, takshan.
- Weaving of clothes of wool is also referred to and obviously it was necessary in the cold weather. Some of the crafts were fulltime crafts, involving specialists.

Trade, Exchange and Redistribution

- Trading activities were limited though traders were present during the Early Vedic period. Panis are referred to as traders and they were perhaps caravan traders. The word pan means barter, which was a mode of exchange.
- Nishka was a gold or silver ornament used in barter. A priest received 100 horses and 100 nishka as fee for sacrifices. The danas and dakshinas offered to people were means of redistributing resources.
- The dakshina was both a fee for a specific service and also a means of distributing wealth. The distribution of cows helped spread pastoral activities and economic production.

Source: Tamil Nadu Board Class 11

Q.9) Which of the following statement is/are not correct?

- Senani was the chief of army.
- People made compulsory contribution called bali to the king.
- The officer who controlled the territory was called Vrajapati.
- Gramini was the head of the village and fighting unit.

ANS: B

Explanation: Polity and Administration:

- The purohita or priest offered advice to the king. Vedic priests advised the kings, inspired them and praised their deeds. In turn they received rewards for their services.
- Senani was the chief of army. There is no evidence of tax collecting officers. Perhaps people made voluntary contribution called bali to the king. Some scholars say that bali was an imposed tax, and not voluntary.
- There is no reference to the administration of justice. The officer who controlled the territory was called Vrajapati. He helped the kulapas or heads of fighting groups called gramini. Gramini was the head of the village and fighting unit.

Source: Tamil Nadu Board Class 11

Q.10) With reference to vedic religion, consider the following statement:

- Soma was the god of plants.
- Maruts was the god of strength.

Which of the statement given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: C

Explanation: Vedic Religion and Rituals:

- Religion and rituals played an important role in Vedic society. In the Rig Veda, the natural forces sun, moon, rivers, mountains and rains were defined as divinities. The religion was naturalistic and polytheistic.
- Indra was the most important god and he was called Purandara. Agni was seen as intermediary between god and people. Surya was a god who removed darkness. Ushas was the goddess of dawn. Aditi, Prithvi and Sinivali are other goddesses. Varuna, the god of water was next in importance.
- This god was the upholder of natural order. Soma was the god of plants and the drink was named after him. Soma drink was part of the ritual and the preparation of this intoxicating drink is explained in many hymns.
- Maruts was the god of strength. Interestingly there are few references to Rudra or Siva. Rituals were adopted as a solution to many issues and the problems of day-to-day life and thus the priests had an important role in the society.

Source: Tamil Nadu Board Class 11

Schemes/ Programmes/ Institution

Q.1) Consider the following statements about BioNEST Scheme:

1. It stands for Bio-Incubators Nurturing Entrepreneurship for Scaling Technologies.
2. It has been launched by Biotechnology Industry Research Assistance Council (BIRAC).

Which of the above given statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: BioNEST Scheme

- BioNEST stands for Bio-Incubators Nurturing Entrepreneurship for Scaling Technologies.
- It has been launched by Biotechnology Industry Research Assistance Council (BIRAC).
- Its aim is to foster the biotech innovation ecosystem in the country by creating globally competent bio-incubation facilities across the country.

Source: ForumIAS EPIC May 2022

Q.2) The Jan Andolan for 'Garbage Free Cities' has been launched by which of the following?

- a) Ministry of Housing and Urban Affairs
- b) Ministry of Health and Family Welfare
- c) NITI Aayog
- d) Ministry of Science and Technology

ANS: A

Explanation: National Behaviour Change Communication Framework for Garbage Free Cities

- It has been launched by the Ministry of Housing and Urban Affairs under Swachh Bharat Mission: Urban 2.0.
- Its aim is to strengthen the ongoing Jan Andolan for 'Garbage Free Cities'.
- The framework serves as a guiding document and blueprint for States and Cities to undertake large scale multimedia campaigns along with intensive and focused interpersonal communication campaigns.
- The framework focuses on intensifying messaging around the key focus areas of source segregation, collection, transportation, and processing of waste, plastic waste management etc.

Source: ForumIAS EPIC May 2022

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Q.3) Azadi Ki Amrit Kahaniya has been launched by the Ministry of Information and Broadcasting (I&B) in collaboration with which of the following OTT platform?

- a) Netflix
- b) Hotstar
- c) Voot
- d) Yupp TV

ANS: A

Explanation: Azadi Ki Amrit Kahaniya

- It has been launched by the Ministry of Information and Broadcasting (I&B) in collaboration with the OTT platform Netflix.
- Its aims are to bring out stories of inspirational Indians on various themes including Women Empowerment, Environment & Sustainability and others.
- In the 1st phase, short videos featuring Women Change-makers from across the country will be released.
- These include:
 - Poonam Nautiyal, a healthcare worker who walked miles across the Bageshwar district in Uttarakhand to vaccinate people for COVID-19 vaccine;
 - Tessy Thomas, the first woman scientist to head a missile project in India;
 - Tanvi Jagadish, India's first competitive woman stand-up paddle boarder among others.

Source: ForumIAS EPIC May 2022

Q.4) The foundation stone for the India International Center for Buddhist Culture & Heritage has been laid down in which of the following country?

- a) Bhutan
- b) Veitnam
- c) Nepal
- d) Srilanka

ANS: C

Explanation: India International Center for Buddhist Culture & Heritage

- The Prime Minister of India laid the foundation stone for the India International Center for Buddhist Culture & Heritage in Lumbini, Nepal.
- It will be constructed by the International Buddhist Confederation (IBC) with the financial support of the Ministry of Culture, Government of India.
- The Center is being created with the view to promote Buddhist philosophy and teachings of Gautama Buddha.
- This Buddhist Centre will be the first 'Net Zero Emission' building in Nepal.

Source: ForumIAS EPIC May 2022

Q.5) Which of the following statement about National Film Heritage Mission (NFHM) is/are correct?

1. It was launched by Ministry of Culture.
2. Its aim is to preserve, restore and digitize India's cinematic heritage.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: National Film Heritage Mission (NFHM)

- It was launched in 2016 by the Ministry of Information & Broadcasting.
- Its aim is to preserve, restore and digitize India's cinematic heritage.
- It is being implemented by the National Film Archives of India (NFAI).
- It is one of the world's largest film preservation missions.
- NFAI was setup in 1964 as a media unit of the Ministry of Information & Broadcasting.
- It is headquartered in Pune, Maharashtra.

Source: ForumIAS EPIC May 2022

Q.6) Malcha Mahal, recently seen in news is located at which of the following places?

- a) Amritsar
- b) Agra
- c) Delhi
- d) Jhansi

ANS: C

Explanation: Malcha Mahal

- The Delhi government is about to renovate this 14th-century monument.
- It is located in Chanakyapuri in Delhi. It was built in 1325 by Sultan Firoz Shah Tughlaq and was used as a hunting lodge for a long time. It later became the residence of the descendants of the Nawab of Awadh.
- It came to be known as 'Wilayat Mahal' after Begum Wilayat Mahal of Awadh who claimed that she was a member of the royal family of Oudh.
- She was given the palace by the government in 1985.
- The monument is not ASI-protected and, therefore, no attention was paid to it in all these years in order to conserve it.

Source: ForumIAS EPIC May 2022

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Q.7) With reference to Microprocessor Development Program, which of the following statement is/are correct?

1. Its aim is to enable the creation of Microprocessors, and achieve industry-grade silicon and Design wins by December 2023.
2. Center for Development of Advanced Computing (CDAC) have developed two microprocessors named Vega (32-bit) and Shakti (64-bit) respectively.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Digital India RISC-V Microprocessor (DIR-V) Program

- It has been launched by the Ministry of Electronics and Information Technology.
- Its aim is to enable the creation of Microprocessors, and achieve industry-grade silicon and Design wins by December 2023.
- It will promote partnerships between Start-ups, Academia & Multinationals to make India a supplier of RISC-V SoC (System on Chips) for Servers, Mobile devices, Automotive, IoT & Microcontrollers.
- IIT Madras and the Center for Development of Advanced Computing (CDAC) have developed two microprocessors named Shakti (32-bit) and Vega (64-bit) respectively under the Microprocessor Development Program.

Source: ForumIAS EPIC May 2022

Q.8) National Open Access Registry (NOAR) is related to which of the following?

- a) Power Sector
- b) Education
- c) Health
- d) Pharmaceutical

ANS: A

Explanation: National Open Access Registry (NOAR)

- It has successfully gone live from 1st May 2022.
- It has been launched by the Ministry of Power.
- It is a centralized online platform through which short-term open access to the interstate transmission system is being managed.
- The platform is accessible to all stakeholders including open access participants, traders, power exchanges, and national/regional/state load despatch centres.
- NOAR is the key to facilitate faster electricity markets and enable the integration of Renewable Energy (RE) resources into the grid.

Source: ForumIAS EPIC May 2022

Q.9) The permanent secretariat of Association of World Election Bodies is located in which of the following countries?

- a) South Korea
- b) India
- c) France
- d) Australia

ANS: A

Explanation: Association of World Election Bodies

- It is the largest association of Election Management Bodies (EMBs) worldwide.
- It was established in 2013.
- The permanent secretariat is located in Seoul, South Korea.
- At present, it has 118 EMBs as Members & 20 Regional Associations/Organisations as Associate Members.
- It was established with the vision of achieving sustainable democracy around the world.
- A-WEB undertakes Election Visitor and Observation Programmes in various countries to study various election management practices and share knowledge with other Member of EMBs.

Source: ForumIAS EPIC May 2022

Q.10) Macolin Convention is related to which of the following?

- a) Gender Equality
- b) Justice
- c) Sports
- d) Ukraine War

ANS: C

Explanation: Macolin Convention

- The Council of Europe Convention on the Manipulation of Sports Competitions better known as the Macolin Convention is a multilateral treaty that aims to prevent, detect, and punish match-fixing in sports.
- The convention was concluded in Macolin, Switzerland in 2014.
- A major focus of the convention is to prevent and punish illegal sports betting operations and to prevent conflicts of interest between legal sports betting operators and sports organizations.
- The 12th meeting of Interpol's Match-Fixing Task Force (IMFTF) concluded with a call to harmonize global efforts to curb competition manipulation.
- Central Bureau of Investigation (CBI) was one of the participants at this meeting.

Source: ForumIAS EPIC May 2022

Science and Technology

Q.1) At which of the following area of space, the James Webb Space Telescope orbits?

- a) Lagrange point L2
- b) Curie Point
- c) Newton Point
- d) CV Raman Point

ANS: A

Explanation:

- James Webb Space Telescope reached its final destination, at around 15 lakh km from Earth.
- The telescope will orbit in an area of space known as a Lagrange point, where the gravitational pull from the Sun and Earth will be balanced by the centrifugal force of the rotating system.
- The points were first theorized by Italian French mathematician Joseph-Louis Lagrange. Webb will go around it in a halo at a distance similar to that between the Earth and Moon

Source: ForumIAS

Q.2) Which of the following country's Mars lander recently detected the largest quake that was observed on another planet?

- a) UAE
- b) USA
- c) China
- d) Israel

ANS: B

Explanation:

- NASA's InSight Mars lander detected the largest quake that was ever observed on another planet. The rover landed on Mars in November 2018 and has heard 1,313 quakes so far, of which the largest "Marsquake" was detected in August 2021.
- On Earth the quakes are caused by shifts in tectonic plates, but Mars does not have tectonic plates and its crust is a giant plate. As per the NASA, the 'marsquakes' are caused due to stresses that cause rock fracture in its crust.

Source: The Hindu

Q.3) Which is the largest recorded bacterium?

- a) Holophaga foetida
- b) Thiomargarita magnifica
- c) Bacillus thuringiensis
- d) Staphylococcus aureus

ANS: B

Explanation:

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- Scientists have discovered the world's largest recorded bacterium *Thiomargarita magnifica* in a Caribbean mangrove. It was measured to be more than a centimetre long.
- It can reach a maximum length of 2 cm.

Source: ForumIAS/The Hindu

Q.4) Which of the following country has developed 'CoVarScan' rapid test that can accurately detect all current variants of SARS-CoV-2?

- a) India
- b) USA
- c) China
- d) Israel

ANS: B

Explanation:

- Scientists in the US have developed a rapid Covid-19 test that can accurately detect all current variants of SARS-CoV-2 within hours named CoVarScan.
- Scientists typically use whole genome sequencing, to determine which variant of Covid-19 a patient has been infected with and it is time-consuming and expensive

Source: The Hindu

Q.5) What is the full-form of 'SMRs', recently suggested by NITI Aayog member for meeting India's energy needs?

- a) Systemic modular reactors
- b) Simple modular reactors
- c) Small modular reactors
- d) Small mutual reactors

ANS: C

Explanation:

- NITI Aayog member and scientist V. K. Saraswat suggested that the government should focus on setting up small modular reactors.
- Small modular reactors (SMRs) are advanced nuclear reactors that have power capacity of up to 300 MW per unit. This would help meet India's energy needs and in replacing the aging thermal power plants.

Source: PIB

Q.6) The rocket named New Shepard, recently seen in news that is associated with which of the following space agency?

- a) ISRO
- b) NASA
- c) Blue Origin
- d) Virgin Atlantic

ANS: C

Explanation:

- The rocket named New Shepard has been test launched recently by Blue Origin. It was an unscrewed test. The New Shepard launch vehicle consists of a reusable rocket and space capsule.

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- During the test, both the capsule and the rocket boosters were brought down to earth successfully. Blue Origin is a private spaceflight company founded in 2000 by Amazon CEO Jeff Bezos.

Source: The Hindu

Q.7) In which State/UT, the world's second-largest refurbished state-of-the-art National Gene Bank is located?

- a) New Delhi
- b) Uttar Pradesh
- c) Gujarat
- d) Goa

ANS: A

Explanation:

- Union Minister for Agriculture and Farmers Welfare Narendra Singh Tomar has inaugurated the world's second-largest refurbished state-of-the-art National Gene Bank at the National Bureau of Plant Genetic Resources (NBPGR), Pusa in New Delhi.
- The need for bio fortified crop varieties is being felt, which the government is trying to overcome.
- The National Gene Bank established in the year 1996 to preserve the seeds of Plant Genetic Resources (PGR) for future generations, has the capacity to preserve about one million germplasm in the form of seeds.
- Presently it is protecting 4.52 lakh accessions, of which 2.7 lakh are Indian germplasm and the rest have been imported from other countries.

Source: The Hindu

Q.8) "The phenomenon when the sun, Earth and a full moon form a perfect line-up and the moon moves into the Earth's shadow" is called as?

- a) Solar Eclipse
- b) Lunar Eclipse
- c) Summer Solstice
- d) Winter Solstice

ANS: B

Explanation:

- The phenomenon when the sun, Earth and a full moon form a perfect line-up and the moon moves into the Earth's shadow is called the Lunar Eclipse.
- The United States of America would witness the longest partial lunar eclipse and the longest in 580 years on 17th November 2021, as per NASA. NASA has stated that the eclipse would last for three hours and 28 minutes.

Source: ForumIAS

Q.9) Indian Space Research Organisation (ISRO) has signed an MoU with which of the following smartphone maker, to strengthen NavIC messaging service?

- a) Xiaomi
- b) OPPO
- c) Huawei
- d) Samsung

ANS: B

Explanation:

- Indian Space Research Organisation (ISRO), Department of Space, and the government of India signed an MoU with smartphone maker OPPO to strengthen research and development of NavIC messaging service.
- NavIC messaging service is the domestic satellite navigation system of India. They will develop indigenous solutions by incorporating the NavIC short messaging feature in the smartphones released by OPPO.

Source: The Hindu

Q.10) Recently China has complained to the UN, about collision with some satellites. The satellites are launched by which of the following project?

- a) Starlink Internet Services project
- b) Psyche Mission
- c) Google Loon Project
- d) Oneweb Satellite Project

ANS: A

Explanation:

- China complained to the United Nations that its space station was forced to avoid collisions with satellites launched by his Starlink Internet Services project.
- As per China's claim to the Vienna-based United Nations Office for Outer Space Affairs, the country's space station had two close encounters with Starlink satellites this year.
- Starlink is a satellite internet network operated by Elon Musk's SpaceX.

Source: The Hindu

Economy

Q.1) Which of the following statement about factors affecting exchange rate system is not correct?

- a) RBI purchases dollars when Indian rupee depreciates.
- b) An increase in inflation rate can increase the demand for foreign currency.
- c) Higher interest rates can lead to the inflow of foreign currency.
- d) An increase in imports, depreciates domestic currency.

ANS: A

Explanation: Factors Affecting the Exchange Rate of India:

Intervention of The Reserve Bank of India: During high volatility in the exchange rate, RBI intervenes to prevent the exchange rate going out of control.

- For example, the RBI sells dollars when Indian rupee depreciates too much, while it purchases dollars when the Indian rupee appreciates beyond a certain level.

Inflation rate: The increase in inflation rate can increase the demand for foreign currency which can negatively impact the exchange rate of the national currency.

- For example, an increase in the inflation level of petroleum oil can increase the demand for foreign currency leading to the depreciation of Indian rupee.

Interest rate: Interest rates on government securities and bonds, corporate securities etc affect the outflow and inflow of foreign currency.

- If the interest rates on government bonds are higher compared to other country forex markets, it can increase the inflow of foreign currency, while lower interest rates can lead to the outflow of foreign currency. This affects the exchange rate of Indian rupee.

Exports and imports: Exports and imports affect exchange rate as exports earn of foreign currency while imports require payments in foreign currency.

- Thus, if the overall exports increases, the national currency appreciates, while an increase in imports leads to the depreciation of the national currency.
- Apart from above, the Indian foreign exchange market is also affected by factors such as the receipts in the accounts of exports in invisibles in the current account, inflow in the capital account such as FDI, external commercial borrowings, foreign institutional investments, NRI deposits, tourism activities etc.

Source: <https://blog.forumias.com/explained-making-sense-of-exchange-rate/>

Q.2) With reference to the Indian Renewable Energy Development Agency Limited (IREDA), which of the following statements is/are correct?

1. It is a Public Limited Government Company.
2. It is a Non-Banking Financial Company.

Select the correct answer using the code given below:

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Indian Renewable Energy Development Agency Limited (IREDA)

IREDA has been awarded “Mini Ratna” (Category -I) status in 2015 by Ministry of New and Renewable Energy (MNRE). IREDA is a Public Limited Government Company established as a NonBanking Financial Institution in 1987 under the administrative control of MNRE to promote, develop and extend financial assistance for renewable energy and energy efficiency /conservation projects with the motto: “ENERGY FOR EVER”.

Source: UPSC CSE 2015

Q.3) Consider the following statements:

1. Farm Sector Promotion Fund (FSPF) has been created in NABARD for supporting innovations in agriculture and allied sector.
2. Promotion of Climate Resilient Agriculture is one of the objectives of this scheme.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Farm Sector Promotion Fund

Farm Sector Promotion Fund (FSPF) has been created in NABARD for supporting innovations in agriculture and allied sector leading to enhancement of farm income and farm productivity, encompassing the following:

- Promotion of Innovations in Agriculture and Allied Sectors
- Enhancing Productivity of Agriculture and Allied sectors and creating market access
- Promotion of Climate Resilient Agriculture in vulnerable/ distressed districts
- Promotion of Agricultural Value Chains
- Promotion of Farmers’ Collectives including training and capacity building
- Supporting Expert Advisory Services, Policy advocacy including building up of human capital in rural areas
- The support under the Fund is in the form of grant, decided on the merits of each case/project. Loan assistance will be funded through the existing loan products of NABARD/ subsidiaries of NABARD.

Source:<https://www.nabard.org/demo/auth/writereaddata/File/Farm%20Sector%20Promotion%20Fund%20Objectives.pdf>

Q.4) Consider the following statements about Indian patent regime:

1. The original Indian Patents Act did not grant patent protection to pharmaceutical products.
2. India is a member of Nice Agreement, concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: The Indian patent regime:

Right granted for an invention- A patent is an exclusive set of rights granted for an invention, which may be a product or process that provides a new way of doing something or offers a new technical solution to a problem. Indian patents are governed by the Indian Patent Act of 1970.

Patent protection of pharmaceuticals -The original Indian Patents Act did not grant patent protection to pharmaceutical products to ensure that medicines were available at a low price. Patent protection of pharmaceuticals were reintroduced after the 2005 amendment to comply with TRIPS

Recent situation- The USTR report highlighted a range of issues in domains ranging from copyright and piracy to trademark counterfeiting and trade secrets, saying that India “remained one of the world’s most challenging major economies with respect to protection and enforcement of IP.”

Nice Agreement- The Nice Agreement is an important administrative tool that establishes a classification of goods and services for registering trademarks and service marks (the Nice Classification).

The trademark offices of member states must indicate, in official documents and publications in connection with each registration, the numbers of the classes of the Classification to which the goods or services for which the mark is registered belong.

India becomes the 88th member of the Nice Agreement.

Source: WIPO

Q.5) Which of the following combination of treaties/agreements is known as Internet treaty?

1. WIPO Copyright Treaty
2. Nice Agreement
3. WIPO Performances and Phonograms Treaty

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1,2 and 3

ANS: C

Explanation: Internet Treaties:

- India joined the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty - known together as the "Internet Treaties". India’s accession brings the total number of contracting parties to the "Internet Treaties" to 97 each.

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- The WIPO Internet Treaties update the multilateral copyright system set forth in older treaties such as the Berne Convention from 1886 and the Rome Convention from 1961 for the digital era. By joining these treaties, India is taking an important step to support the development of its renowned creative industries and to allow them to distribute their creative outputs worldwide within the copyright framework.

Source: WIPO

Q.6) With respect to Balance of Trade, which of the following statement is/are not correct?

1. Balance of trade is the difference between the value of a country's imports and exports for a given period.
2. The Balance of Payment (BOP) combines only public investments to find out the money inflow and outflow in an economy over a specific period.
3. Positive Balance of Payment (BOP) indicates deficit.

Select the correct answer using the code given below:

- a) 1 only
- b) 1 and 3 only
- c) 1 and 2 only
- d) 2 and 3 only

ANS: D

Explanation: Balance of Trade

The term 'trade' refers to buying and selling of goods. However, when it is performed on an international scale, it is called imports and exports. Balance of Trade (BOT) mentions the import and exports made by a nation's economy within a specific year. BOT only records tangible items.

Balance of trade (BOT) is the difference between the value of a country's imports and exports for a given period and is the largest component of a country's balance of payments (BOP).

Balance of Payment is a combination of accounts that shows the commercial transactions concluded by a country within a specific period with other countries. These accounts reflect every monetary transaction, i.e. commodities, services, and incomes during that period.

The Balance of Payment (BOP) combines every private and public investment to find out the money inflow and outflow in an economy over a specific period.

The ideal status of BOP should be zero, which indicates that the money coming into the country is equal to the money going out of the country. However, this situation is highly unlikely. Therefore, if it is negative, then it indicates deficit, and if positive, it means a surplus.

Source: ForumIAS

Q.7) With reference to Modified Industrial Infrastructure Upgradation Scheme, consider the following statements:

1. The scheme is implemented by the Department for Promotion of Industry and Internal Trade.
2. The objective of the scheme is to improve the competitiveness of domestic industry by providing quality infrastructure by 100% Central Government investment.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: A

Explanation: Modified Industrial Infrastructure Upgradation Scheme

It is implemented by the Department for Promotion of Industry and Internal Trade, under the Ministry of Commerce and Industry.

The objective of the scheme is to improve the competitiveness of domestic industry by providing quality infrastructure by public-private partnership.

- MIUS - Modified Industrial Infrastructure Upgradation Scheme
- Industrial Infrastructure Upgradation Scheme (IIUS) was launched in 2003 with the objective of enhancing industrial competitiveness of domestic industry by providing quality infrastructure through public private partnership
- A modified version of IIUS viz. 'Modified Industrial Infrastructure Upgradation Scheme (MIIUS)' was notified in July 2013.
- Under MIIUS, projects have been undertaken to upgrade infrastructure in existing Industrial Parks/ Estates/ Areas.
- Greenfield Projects have also been undertaken in backward areas and North Eastern Region (NER).
- It is implemented by the Department for Promotion of Industry and Internal Trade, under the Ministry of Commerce and Industry.

Source: <https://dpiit.gov.in/programmes-and-schemes/infrastructure/industrial-infrastructure-upgradation-scheme-iius>

Q.8) The term like 'Unicorn', often seen in news, implies which of the following?

- a) A startup that reaches the valuation of \$1 billion.
- b) Any startup that reaches the funding of \$1 billion.
- c) A government aided startup.
- d) A startup which has monopoly in e-commerce.

ANS: A

Explanation: Unicorn:

- In the venture capital industry, the term unicorn refers to any startup that reaches the valuation of \$1 billion.
- Only a privately held startup can be a unicorn.
- The term initially was used to lay emphasis on the rarity of such startups.
- Disruptive Innovation, high on technology, new ideas, consumer focus are some of the common features of unicorns.

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- As of 27th January 2022, India is home to 84 unicorns with a total valuation of \$ 286.27 Bn. Sequoia has been the most active investor in Indian Unicorns, followed by Tiger Global Management, Accel, and Softbank.
- A decacorn is company that has attained a valuation of more than \$ 10 Bn. As of January 2022, 46 companies world over have achieved the decacorn status. India has four startups namely, Flipkart, BYJU's, Paytm and Swiggy, added in decacorn cohort.
- Recently, an Indian startup founder quipped on Twitter that the definition of a 'Unicorn' as used in the venture capital industry should now change to \$1 billion of funding raised. The term currently refers to a startup that reaches a valuation of \$1 billion.
- He was commenting on the flurry of unicorns that have been created globally. The term was originally coined by US venture capitalist Aileen Lee in 2013 when there were just 39 startups globally that fit the definition, which has not changed since then.

Source: <https://blog.forumias.com/explained-what-is-a-unicorn-and-what-does-it-take-to-become-one/>

Q.9) Who among the following can join the National Pension System (NPS)?

- a) Resident Indian citizens only
- b) Persons of age from 21 to 55 only
- c) All State Government employees joining the services after the date of notification by the respective State Governments
- d) All Central Governments Employees including those of Armed Forces joining the services on or after 1st April, 2004

ANS: C

Explanation: The Central Government had introduced the National Pension System (NPS) with effect from January 1, 2004 (except for armed forces).

- Subsequently, various State Governments adopted this architecture and implemented NPS with effect from different dates.
- Eligibility – Any citizen of India, whether resident or non-resident, subject to the following conditions.
 - Individuals who are aged between 18 – 60 years, including NRIs .
 - After attaining 60 years of age, you will not be permitted to make further contributions to the NPS accounts

Source: UPSC CSE 2017.

Q.10) Nivesh Bandhu Portal, setup by Indian government for attracting investment in India is associated with which of the following sectors?

- a) Food processing
- b) e-Vehicle
- c) Communication and IT
- d) Electronics and Equipment

ANS: A

Explanation: Nivesh Bandhu Portal:

- It is the investment portal under the Ministry of Food Processing Industries, India.
- The portal provides a platform to all the investors who are looking to invest in India in the food processing sector.

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- The portal highlights the steps on doing business in India, policies and facilities provided by the government and the regulatory frameworks that are involved in setting up the operations in India.

The aim of the NiveshBandhu Portal is:

- Boost investments in the food processing sector of India
- To ease the handholding process for the investors
- Tap the potential of all the sub sectors in Food Processing
- To guide and assist the investors with the major infrastructure available in India (Mega Food Parks, Cold Chains and Agro Processing Clusters)
- Support investors and companies with the schemes, policies and incentives given by the State and the Central Government

Source: <https://foodprocessingindia.gov.in/information/details/about-nivesh-bandhu>

Polity

Q.1) In India recognition to political parties is accorded by whom among the following?

- a) President
- b) Speaker of Lok Sabha
- c) Election Commission
- d) Ministry of Parliamentary Affairs

ANS: C

Explanation: Recognition of National and State Parties:

- The Election Commission registers political parties for the purpose of elections and grants them recognition as national or state parties on the basis of their poll performance.
- The other parties are simply declared as registered-unrecognised parties.
- The recognition granted by the Commission to the parties determines their right to certain privileges like allocation of the party symbols, provision of time for political broadcasts on the state-owned television and radio stations and access to electoral rolls.

Source: Laxmikanth

Q.2) Which one of the following ideologies has class-struggle as a part of its doctrine?

- a) Communism
- b) Capitalism
- c) Fascism
- d) Socialism

ANS: B

Explanation: Doctrine of Class Struggle

- Marx, one of the principle architects of modern social science, believed that history was made of up stages driven by class conflict. Famously, Marx wrote in The Communist Manifesto, “The history of all hitherto existing society is the history of class struggles”.
- Class struggle pushed society from one stage to the next, in a dialectical process. In each stage, an ownership class controls the means of production while a lower class provides labor for production.
- The two classes come into conflict and that conflict leads to social change. For example, in the feudal stage, feudal lords owned the land used to produce agricultural goods, while serfs provided the labor to plant, raise, and harvest crops. When the serfs rose up and overthrew the feudal lords, the feudal stage ended and ushered in a new stage: capitalism.

Instabilities in Capitalism

- Marx’s work focused largely on explaining the inherent instabilities present in capitalism and predicting its eventual fall and transition to socialism. Marx argued that capitalism was unstable and prone to periodic crises.
- Marx believed that economic growth would be punctuated by increasingly severe crises as capitalism went through cycles of growth, collapse, and more growth. Moreover, he

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believed that in the long-term this process would necessarily enrich and empower the capitalist class, while at the same time it would impoverish the poorer laboring class, which he referred to as the proletariat.

- Eventually, the proletariat would become class conscious—aware that their seemingly individual problems were created by an economic system that disadvantaged all those who did not own the means of production. Once the proletariat developed a class consciousness, Marx believed they would rise up and seize the means of production, overthrowing the capitalist mode of production, and bringing about a socialist society.
- Marx believed that the socialist system established after the proletariat revolution would encourage social relations that would benefit everyone equally, abolish the exploitative capitalist, ending their exclusive ownership of the means of production, and introduce a system of production less vulnerable to cyclical crises. For Marx, this eventual uprising was inevitable, given the inherent structural contradictions in capitalism and the inevitability of class conflict.

Source: NCERT-Political Theory

Q.3) Which one of the following is the fundamental characteristic of the ultimate stage of communism?

- a) Cultural Revolution
- b) Dictatorship of proletariat
- c) Formation of a World state
- d) Withering away of the state

ANS: D

Explanation: According to Marx's theory of historical materialism, societies pass through six stages:

- primitive communism,
- slave society,
- feudalism,
- capitalism,
- socialism
- global, stateless communism.

Source: <https://www.thehindu.com/news/international/karl-marx-in-five-core-ideas/article23774957.ece>

Q.4) A dispute arising out of the election of the President of India is referred to the:

- a) Election Commission
- b) Supreme Court of India
- c) Lok Sabha
- d) Law Commission

ANS: B

Explanation: Election of President

- All doubts and disputes in connection with election of the President are inquired into and decided by the Supreme Court whose decision is final.

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- The election of a person as President cannot be challenged on the ground that the Electoral College was incomplete (ie, existence of any vacancy among the members of Electoral College).
- If the election of a person as President is declared void by the Supreme Court, acts done by him before the date of such declaration of the Supreme Court are not invalidated and continue to remain in force.

Source: Laxmikanth

Q.5) Which of the following committee submitted reports on Electoral reforms?

1. Dinesh Goswami Committee
2. Tarkunde Committee
3. Indrajit Gupta Committee
4. Balwant Rai Mehta Committee

Select the correct answer using the codes given below:

- a) 1, 3 and 4 only
- b) 2 and 4 only
- c) 1, 2 and 3 only
- d) 3 and 4 only

ANS: C

Explanation: Committees Related to Electoral Reforms:

The various committees and commissions which have examined our electoral system, election machinery as well as election process and suggested reforms are mentioned here.

- Joint Parliamentary Committee on Amendments to Election Laws (1971-72).
- Tarkunde Committee was appointed in 1974 by Jaya Prakash Narayan (JP) during his “Total Revolution” movement. This unofficial committee submitted its report in 1975.
- Dinesh Goswami Committee on Electoral Reforms (1990)
- Vohra Committee on the Nexus between Crime and Politics (1993)
- Election Commission of India Recommendations on Electoral Reforms (1998).
- Indrajit Gupta Committee on State Funding of Elections (1998)
- Law Commission of India 170th Report on Reform of the Electoral Laws (1999)
- National Commission to Review the Working of the Constitution (2000- 2002). It was headed by M.N. Venkatachaliah.
- Election Commission of India Report on Proposed Electoral Reforms (2004).
- Second Administrative Reforms Commission of India Report on Ethics in Governance (2007). It was headed by Veerappa Moily.
- Tankha Committee (Core Committee) was appointed in 2010 to look into the whole gamut of the election laws and electoral reforms.
- J.S. Verma Committee Report on Amendments to Criminal Law (2013).
- Law Commission of India 244th Report on Electoral Disqualifications (2014).
- Law Commission of India 255th Report on Electoral Reforms (2015).

Source: Laxmikanth

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Q.6) The 2nd Administrative Reform Commission has not produced a report on which of the following?

- a) Ethics in Governance
- b) Local Governance
- c) Combating Terrorism
- d) Eradication of Corruption

ANS: D

Explanation: 2nd Administrative Reform Commission:

- The Administrative Reforms Commission's reports are known as ARC Reports.
- The 2nd ARC (2005) drew up a thorough design for reforming the government's administrative system.
- It presented the government with 15 reports listed below:

Report	Title
1st Report	Right to Information: Master Key to Good Governance
2nd Report	Unlocking Human Capital: Entitlements and Governance
3rd Report	Crisis Management
4th Report	Ethics in Governance
5th Report	Public Order
6th Report	Local Governance
7th Report	Capacity Building for Conflict Resolution
8th Report	Combating Terrorism - Protecting by Righteousness
9th Report	Social Capital-A shared Destiny
10th Report	Refurbishing of Personnel Administration & Scaling New Heights
11th Report	Promoting eGovernance : The Smart Way Forward
12th Report	Citizen Centric Administration
13th Report	Organisational structure of Govt of India
14th Report	Strengthening Financial Management Systems
15th Report	State and District Administration

Source: <https://darpg.gov.in/en/arc-reports>

Q.7) Which among the following trade union was established earliest?

- a) Hind Mazdoor Sabha
- b) Indian National Trade Union Congress
- c) All India Trade Union Congress
- d) Centre of Indian Trade Union

ANS: C

Explanation: Trade Union:

The trade unions voice the demands of the industrial workers. They are also known as labour groups. A peculiar feature of trade unions in India is that they are associated either directly or indirectly with different political parties. They include:

- All-India Trade Union Congress (AITUC)–affiliated to CPI
- Indian National Trade Union Congress (INTUC)–affiliated to the Congress (1947)
- Hind Mazdoor Sabha (HMS)–affiliated to the Socialists (1948)
- Centre of Indian Trade Unions (CITU)– affiliated to the CPM (1970)
- Bharatiya Mazdoor Sangh (BMS)– affiliated to the BJP (1955)

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First Trade Union in India: All India Trade Union Congress (AITUC) was founded in 1920 with LalaLajpatRai as its first president. Upto 1945, Congressmen, Socialists and Communists worked in the AITUC which was the central trade union organisation of workers of India. Subsequently, the trade union movement got split on political lines.

Source: Laxmikanth

Q.8) Which of the following statement about National Foundation for Communal Harmony is not correct?

- a) It was set up in 1992.
- b) It is an autonomous body under the administrative control of the PMO.
- c) It promotes communal harmony, fraternity and national integration.
- d) Both (a) and (b)

ANS: B

Explanation: National Foundation for Communal Harmony:

- The National Foundation for Communal Harmony (NFCH) was set up in 1992. It is an autonomous body under the administrative control of the Union Home Ministry.
- It promotes communal harmony, fraternity and national integration. The vision and mission of the NFCH are as follows: Vision: India free from communal and all other forms of violence where all citizens especially children and youth live together in peace and harmony.
- Mission: Promoting communal harmony, strengthening national integration and fostering unity in diversity through collaborative social action, awareness programs, reaching out to the victims of violence especially children, encouraging interfaith dialogue for India's shared security, peace and prosperity.

Source: Laxmikanth

Q.9) "It is a technique used by Pressure Groups in which they try to influence public opinion and thereby gain an indirect influence over government, since the government in a democracy is substantially affected by public opinion."

Which of the following technique is described in the above statement?

- a) Propagandizing
- b) Lobbying
- c) Electioneering
- d) None

ANS: A

Explanation: Pressure Group:

- According to Odegard, pressure groups resort to three different techniques in securing their purposes. First, they can try to place in public office persons who are favourably disposed towards the interests they seek to promote.
- This technique may be labelled electioneering. Second, they can try to persuade public officers, whether they are initially favourably disposed toward them or not, to adopt and enforce the policies that they think will prove most beneficial to their interests.
- This technique may be labelled lobbying. Third, they can try to influence public opinion and thereby gain an indirect influence over government, since the government in a

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democracy is substantially affected by public opinion. This technique may be labelled propagandizing.

Source: Laxmikanth

Q.10) In which of the following state/UT, EVMs were used for the first time in the general elections (entire state) to the Assembly?

- a) Delhi
- b) Sikkim
- c) Goa
- d) Tripura

ANS: C

Explanation: Electronic Voting Machines:

- In 1989, a provision was made to facilitate the use of Electronic Voting Machines (EVMs) in elections. The EVMs were used for the first time in 1998 on experimental basis in selected constituencies in the elections to the Assemblies of Rajasthan, Madhya Pradesh and Delhi.
- The EVMs were used for the first time in the general elections (entire state) to the Assembly of Goa in 1999.

Source: Laxmikanth

Geography

Q.1) Consider the following statements about interior of earth:

1. A large part of the information about interior of earth is obtained through direct sources.
2. Volcanic eruption forms an important source of obtaining indirect information.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: Sources of information about the interior:

- The earth's radius is 6,370 km. No one can reach the centre of the earth and make observations or collect samples of the material.
- Under such conditions, you may wonder how scientists tell us about the earth's interior and the type of materials that exist at such depths.
- Most of our knowledge about the interior of the earth is largely based on estimates and inferences. Yet, a part of the information is obtained through direct observations and analysis of materials.

Direct Sources

- The most easily available solid earth material is surface rock or the rocks we get from mining areas. Gold mines in South Africa are as deep as 3 - 4 km.
- Going beyond this depth is not possible as it is very hot at this depth. Besides mining, scientists have taken up a number of projects to penetrate deeper depths to explore the conditions in the crustal portions.
- Scientists world over are working on two major projects such as "Deep Ocean Drilling Project" and "Integrated Ocean Drilling Project". The deepest drill at Kola, in Arctic Ocean, has so far reached a depth of 12 km. This and many deep drilling projects have provided large volume of information through the analysis of materials collected at different depths.
- Volcanic eruption forms another source of obtaining direct information. As and when the molten material (magma) is thrown onto the surface of the earth, during volcanic eruption it becomes available for laboratory analysis.

However, it is difficult to ascertain the depth of the source of such magma.

Source: NCERT Class 11

Q.2) Consider the following sources of information about interior of earth:

1. Magnetic Field
2. Gravitational Force
3. Gold Mines

Which of the above mentioned sources is/are indirect sources?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: A

Explanation: Indirect Sources

- Analysis of properties of matter indirectly provides information about the interior. We know through the mining activity that temperature and pressure increase with the increasing distance from the surface towards the interior in deeper depths.
- Moreover, it is also known that the density of the material also increases with depth. It is possible to find the rate of change of these characteristics. Knowing the total thickness of the earth, scientists have estimated the values of temperature, pressure and the density of materials at different depths.
- The details of these characteristics with reference to each layer of the interior are discussed later in this chapter.
- Another source of information are the meteors that at times reach the earth. However, it may be noted that the material that becomes available for analysis from meteors, is not from the interior of the earth.
- The material and the structure observed in the meteors are similar to that of the earth. They are solid bodies developed out of materials same as, or similar to, our planet. Hence, this becomes yet another source of information about the interior of the earth.
- The other indirect sources include gravitation, magnetic field, and seismic activity.
- The gravitation force (g) is not the same at different latitudes on the surface. It is greater near the poles and less at the equator. This is because of the distance from the centre at the equator being greater than that at the poles.
- The gravity values also differ according to the mass of material. The uneven distribution of mass of material within the earth influences this value. The reading of the gravity at different places is influenced by many other factors.
- These readings differ from the expected values.
- Such a difference is called gravity anomaly.
- Gravity anomalies give us information about the distribution of mass of the material in the crust of the earth. Magnetic surveys also provide information about the distribution of magnetic materials in the crustal portion, and thus, provide information about the distribution of materials in this part.
- Seismic activity is one of the most important sources of information about the interior of the earth.

Source: NCERT Class 11

Q.3) With respect to earthquake, which of the following given statement is/are correct?

1. The point where the energy is released is called the hypocenter.
2. The point on the surface, nearest to the focus, is called epicenter

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: C

Explanation: Why does the earth shake?

- The release of energy occurs along a fault. A fault is a sharp break in the crustal rocks.
- Rocks along a fault tend to move in opposite directions.
- As the overlying rock strata press them, the friction locks them together. However, their tendency to move apart at some point of time overcomes the friction.
- As a result, the blocks get deformed and eventually, they slide past one another abruptly. This causes a release of energy, and the energy waves travel in all directions.
- The point where the energy is released is called the focus of an earthquake, alternatively, it is called the hypocentre. The energy waves travelling in different directions reach the surface.
- The point on the surface, nearest to the focus, is called epicentre. It is the first one to experience the waves. It is a point directly above the focus.

Source: NCERT Class 11

Q.4.) With respect to earthquake waves, which of the following statement is/are correct?

1. The Surface waves move along the surface and the velocity of these waves do not changes with change in the density of material they are travelling.
2. Body waves are generated due to the release of energy at the focus and move in all directions.

Select the correct answer using the codes given below:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: B

Explanation: Earthquake Waves:

- All natural earthquakes take place in the lithosphere. You will learn about different layers of the earth later in this chapter. It is sufficient to note here that the lithosphere refers to the portion of depth up to 200 km from the surface of the earth.
- An instrument called 'seismograph' records the waves reaching the surface. A curve of earthquake waves recorded on the seismograph is given in Figure 3.1. Note that the curve shows three distinct sections each representing different types of wave patterns.
- Earthquake waves are basically of two types — body waves and surface waves. Body waves are generated due to the release of energy at the focus and move in all directions travelling through the body of the earth.

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- Hence, the name body waves. The body waves interact with the surface rocks and generate new set of waves called surface waves. These waves move along the surface. The velocity of waves changes as they travel through materials with different densities.
- The denser the material, the higher is the velocity. Their direction also changes as they reflect or refract when coming across materials with different densities.

Source: NCERT Class 11

Q.5) Which of the following statement about Body waves is/are correct?

1. S-Wave travel through gaseous, liquid and solid materials.
2. Seismograph helps in inferring the variations in the direction of waves.
3. Body waves are less destructive than the surface waves.

Select the correct answer using the codes given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2 and 3

ANS: B

Explanation: Body waves:

- There are two types of body waves. They are called P and S-waves. P-waves move faster and are the first to arrive at the surface. These are also called 'primary waves'. The P-waves are similar to sound waves. They travel through gaseous, liquid and solid materials.
- S-waves arrive at the surface with some time lag. These are called secondary waves. An important fact about S-waves is that they can travel only through solid materials. This characteristic of the S-waves is quite important.
- It has helped scientists to understand the structure of the interior of the earth. Reflection causes waves to rebound whereas refraction makes waves move in different directions. The variations in the direction of waves are inferred with the help of their record on seismograph. The surface waves are the last to report on seismograph.
- These waves are more destructive. They cause displacement of rocks, and hence, the collapse of structures occurs.

Source: NCERT Class 11

Q.6) Consider the following pairs:

Type of Earthquake	Related to
1. Collapse Earthquake	Large Reservoirs
2. Explosion Earthquake	Nuclear Device
3. Tectonic Earthquake	Fault Line
4. Volcanic Earthquake	Active Volcanoes

How many of the pairs given above is/are correctly matched?

- a) One pair only
- b) Two pairs only
- c) Three pairs only
- d) All four pairs

ANS: C

Explanation: Types of Earthquakes:

- The most common ones are the tectonic earthquakes. These are generated due to sliding of rocks along a fault plane.
- A special class of tectonic earthquake is sometimes recognised as volcanic earthquake. However, these are confined to areas of active volcanoes.
- In the areas of intense mining activity, sometimes the roofs of underground mines collapse causing minor tremors. These are called collapse earthquakes.
- Ground shaking may also occur due to the explosion of chemical or nuclear devices. Such tremors are called explosion earthquakes.
- The earthquakes that occur in the areas of large reservoirs are referred to as reservoir induced earthquakes.

Source: NCERT Class 11

Q.7) Which of the following scale measures the intensity of an earthquake?

- a) Richter Scale
- b) Mercalli Scale
- c) Pycnometer
- d) None

ANS: B

Explanation: Measuring Earthquakes:

- The earthquake events are scaled either according to the magnitude or intensity of the shock.
- The magnitude scale is known as the Richter scale. The magnitude relates to the energy released during the quake. The magnitude is expressed in numbers, 0-10.
- The intensity scale is named after Mercalli, an Italian seismologist. (The Mercalli Scale is based on observable earthquake damage. From a scientific standpoint, the magnitude scale is based on seismic records while the Mercalli is based on observable data which can be subjective).
- The intensity scale takes into account the visible damage caused by the event. The range of intensity scale is from 1-12.
- NOTE: A pycnometer allows measuring the volume and the density of solid objects in a non-destructive manner.

Source: NCERT Class 11

Q.8) Consider the following immediate hazardous effects of earthquake:

1. Tsunami
2. Mudslide
3. Soil Liquefaction
4. Avalanche
5. Levee Failure

Which of the above mentioned have some bearings upon landforms?

- a) 1, 2 and 3 only
- b) 2, 3 and 4 only
- c) 1, 2, 4 and 5 only
- d) 2, 3, 4 and 5 only

ANS: B

Explanation: Effects of Earthquake:

Earthquake is a natural hazard. The following are the immediate hazardous effects of earthquake:

- Ground Shaking
- Differential ground settlement
- Land and mud slides
- Soil liquefaction
- Ground lurching
- Avalanches
- Ground displacement
- Floods from dam and levee failures
- Fires
- Structural collapse
- Falling objects
- Tsunami

The first six listed above have some bearings upon landforms, while others may be considered the effects causing immediate concern to the life and properties of people in the region.

The effect of tsunami would occur only if the epicentre of the tremor is below oceanic waters and the magnitude is sufficiently high. Tsunamis are waves generated by the tremors and not an earthquake in itself. Though the actual quake activity lasts for a few seconds, its effects are devastating provided the magnitude of the quake is more than 5 on the Richter scale.

Source: NCERT Class 11

Q.9) With respect to structure of the earth, consider the following statements:

1. The mean thickness of oceanic crust is more than the continental crust.
2. The stronger region of mantle is called as asthenosphere.

Which of the above mentioned statement is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

ANS: D

Explanation: STRUCTURE OF THE EARTH:

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- The Crust It is the outermost solid part of the earth. It is brittle in nature. The thickness of the crust varies under the oceanic and continental areas.
- Oceanic crust is thinner as compared to the continental crust. The mean thickness of oceanic crust is 5 km whereas that of the continental is around 30 km. The continental crust is thicker in the areas of major mountain systems. It is as much as 70 km thick in the Himalayan region.
- The Mantle The portion of the interior beyond the crust is called the mantle. The mantle extends from Moho's discontinuity to a depth of 2,900 km.
- The upper portion of the mantle is called asthenosphere. The word astheno means weak. It is considered to be extending upto 400 km.
- The Core As indicated earlier, the earthquake wave velocities helped in understanding the existence of the core of the earth. The core-mantle boundary is located at the depth of 2,900 km.
- The outer core is in liquid state while the inner core is in solid state. The density of material at the mantle core boundary is around 5 g/cm³ and at the centre of the earth at 6,300 km, the density value is around 13g/cm³. The core is made up of very heavy material mostly constituted by nickel and iron. It is sometimes referred to as the nife layer.

Source: NCERT Class 11

Q.10) "These are the most explosive of the earth's volcanoes. They are usually so explosive that when they erupt they tend to collapse on themselves rather than building any tall structure."

Which of the following is described in the above given statement?

- a) Composite Volcano
- b) Flood Basalt Provinces
- c) Caldera
- d) Mid-Ocean Ridge Volcanoes

ANS: C

Explanation: Caldera:

- These are the most explosive of the earth's volcanoes. They are usually so explosive that when they erupt they tend to collapse on themselves rather than building any tall structure.
- The collapsed depressions are called calderas. Their explosiveness indicates that the magma chamber supplying the lava is not only huge but is also in close vicinity.

Source: NCERT Class 11