

ForumIAS

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Prelims Marathon

20 Dec to 26 Dec, 2021

HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

Economy

Q.1) Consider the following statements regarding the “gig economy”:

1. Gig workers include self-employed, freelancers, independent contributors and part-time workers.
2. It is tech-enabled platforms connect the consumer to the gig worker to hire services on a short-term basis.

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: Gig economy can be defined as a work engagement where on one side, there is a service seeker i.e. a consumer with a demand for a specific task, and on the other side, and there is a service provider i.e. a gig worker who can perform that specific task.

- A gig economy undermines the traditional economy of full-time workers who rarely change positions and instead focus on a lifetime career.
- In this economy, tech-enabled platforms connect the consumer to the gig worker to hire services on a short-term basis.
- Gig workers include self-employed, freelancers, independent contributors and part-time workers.
- The digital gig economy generated a gross volume of approximately \$204 bn from worldwide customers in 2018.
- Transportation-based services contributed to over 50% of this value. The size of the gig economy is projected to grow by a 17% CAGR and generate a gross volume of ~\$455 bn by 2023.
- India has emerged as the 5th largest country for flexi-staffing after US, China, Brazil and Japan.
- Haryana, Madhya Pradesh, Andhra Pradesh, Gujarat and Telangana have most opportunities in terms of growth for the flexi-workers.

Source: The Hindu

Q.2) Which of the following are the objectives of the “National Digital Communications Policy”?

1. Broadband for all by 2025.
2. Creating 100 Million additional jobs in the Digital Communications sector.
3. Enhancing the contribution of the Digital Communications sector to 10% of India’s GDP from 5% in 2017.
4. Ensuring Digital Sovereignty.

Select the correct answer using the code given below:

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

ANS: C

Explanation: The National Digital Communications Policy, 2018 seeks to unlock the transformative power of digital communications networks - to achieve the goal of digital empowerment and improved well being of the people of India; and towards this end, attempts to outline a set of goals, initiatives, strategies and intended policy outcomes.

The National Communications Policy aims to accomplish the following Strategic Objectives by 2022:

- Provisioning of Broadband for All
- Creating 4 Million additional jobs in the Digital Communications sector
- Enhancing the contribution of the Digital Communications sector to 8% of India's GDP from ~ 6% in 2017
- Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017
- Enhancing India's contribution to Global Value Chains
- Ensuring Digital Sovereignty

Source: Sriram's IAS

Q.3) Which of the following measures will spur the economic growth?

1. Transparent and hassle free land acquiring.
2. Availability of Skilled labour.
3. High interest rates in the economy.
4. Decrease in effective demand.

Select the correct answer using the code given below:

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

ANS: A

Explanation: The traditional argument is that the lower the interest rate, the better for businesses as it brings down the cost of capital, making investments more attractive.

- Any government would love this as the country would then draw higher investments leading to higher growth and more job creation.
- Governments abhor higher interest rates as, theoretically, these push up project costs and keep investors away.
- Capital is one of the three main factors of production, which are critical to the growth of a commercial entity, the other two being land and labour.
- But capital is only a necessary, not sufficient, condition. Land, unless allocated by the local government, is too costly for investors seeking to set up shop.
- On labour, even if adequate hands are available for a job, the skill quotient is still low. Training graduates to be job-ready is a form of tax that companies pay.
- Also to be taken into account is the market environment and demand. If end users are seeing lesser money in hand than earlier, demand will certainly be impacted.
- Therefore, in an environment where the other factors of production are not favourable for an investor, low interest rates by themselves may not prove attractive enough.
- Any revival of economic activity will be contingent on joint efforts by the government on the fiscal front to stimulate demand, and the RBI, to keep interest rates low.

Source: Sriram's IAS

Q.4) With reference to the new hydro policy 2019, which of the following statements is/are correct?

1. It includes large hydro projects within the ambit of renewable energy.
2. Now the renewable energy capacity has increased to 34.4% of total energy mix.

Select the correct answer using the code given below:

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

ANS: C

Explanation: The Union Cabinet approved a new hydroelectricity policy that, among other things, included large hydro projects within the ambit of renewable energy.

- Prior to the policy, only small hydro projects of a capacity of less than 25 MW were treated as renewable energy. Large hydro projects were treated as a separate source of energy.
- India's renewable energy sector had an installed capacity of 75,055.92 MW as of February 2019, according to data with the Central Electricity Authority.
- This made up about 21.4% of the overall energy mix, with the rest coming from thermal, nuclear and large hydro sources.
- With the inclusion of large hydro in renewable energy, the energy mix changes drastically.
- Renewable energy capacity would now be 1,20,455.14 MW or 34.4% of the overall energy mix.

Source: The Hindu

Q.5) The "GATI portal" is recently in news is related to which of the following?

- a) Ship Tracking
- b) Flight tracking
- c) National highways
- d) Inland water ways

ANS: C

Explanation: Terming delays in highway projects as "unacceptable", Road Transport and Highways Minister, asked officials and developers to strictly adhere to project schedules.

- Minister also launched online web portal 'GATI' on the pattern of 'PRAGATI', the portal used by the Prime Ministers' Office for monitoring projects.
- The portal 'GATI' can be accessed from NHAI's website, and contractors and concessionaires can raise any project-related issues on the platform, according to a statement by the Ministry of Road Transport and Highways.
- The issues raised on 'GATI' will be daily monitored by a team of NHAI officers and will be constantly reviewed by the senior officers of the National Highways Authority of India (NHAI) and the Ministry of Road Transport and Highways.

Source: The Hindu

Q.6) "World Investment Report" published by which of the following?

- a) World Bank
- b) WEF
- c) UNIDO
- d) UNCTAD

ANS: D

Explanation: India improved its position from 12th in 2018 to 9th in 2019 in the list of the world's largest FDI recipients according to the latest World Investment Report 2020 by United Nations Conference on Trade and Development (UNCTAD).

Source: Economic Survey 2020 – 2021

Q.7) The “Draft Scheme of Reconstruction” is recently in news is related to which of the following?

- a) Banking
- b) Railways
- c) Roadways
- d) Port rejuvenation

ANS: A

Explanation: RBI has placed the financially troubled Yes Bank under a moratorium (temporary suspension).

- After placing this bank under a moratorium, the RBI announced a draft Scheme of Reconstruction.
- This scheme entails the State Bank of India (SBI) investing capital to acquire a 49% stake in the restructured private lender.

Source: The Hindu

Q.8) Which of the following Insurance companies are works under General Insurance Corporation of India (GIC)?

1. National Insurance Company Ltd.
2. New India assurance Company Ltd.
3. Oriental Fire and Insurance Company Ltd.

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: In 1971, the government nationalised the private sector companies (107 Indian and foreign companies) playing in the general insurance segment and a government company, the General Insurance Corporation of India (GIC) was formed in 1972. The GIC started operation on January 1, 1973 with its four holding companies:

- National Insurance Company Ltd.
- New India Assurance Company Ltd.
- Oriental Fire and Insurance Comany Ltd.
- United India Insurance Company Ltd.

Source: TMH Ramesh Singh

Q.9) With reference to the Other Service Providers (OSP's), which of the following statements is/are correct?

1. OSPs or other service providers are companies or firms which provide secondary or tertiary services such as telemarketing, tele-banking or telemedicine for various companies, banks or hospital chains.
2. It requires minimal investment but gave great returns in business.

Select the correct answer using the codes given below:

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

ANS: C

Explanation: OSPs or other service providers are companies or firms which provide secondary or tertiary services such as telemarketing, tele-banking or telemedicine for various companies, banks or hospital chains, respectively.

- As computers made their foray into the Indian information technology space, a number of such OSPs, which were either voice or non-voice based, came into the market.
- The sector required minimal investment but gave great returns in business, which prompted a large number of individuals and companies to float other service providing firms.
- Since most of these firms used leased telephone lines, which in turn used the telecom spectrum auctioned by the Department of Telecommunications (DoT), the new telecom policy of 1999 suggested that all OSPs register themselves so that the government could keep a check on the usage of its resources.

Source: Indian Express

Q.10) With reference to the Insurance Regulatory and Development Authority (IRDA), which of the following statements is/are correct?

1. It is a statutory body.
2. The chairman and its members are appointed by government.

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: The Insurance Regulatory and Development Authority (IRDA) was set up in 2000 (the Act was passed in 1999) with one chairman and five members (two as full time and three as part-time members) appointed and nominated by the government.

The authority is responsible for the regulation, development and supervision of the Indian insurance industry.

Source: TMH Ramesh Singh

Economy

Q.1) Consider the following statements regarding Accelerated Irrigation Benefit Programme (AIBP):

1. It was launched in sixth plan to support major and medium irrigation projects.
2. At present, AIBP became a part of PMKSY.

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: Central Government launched the Accelerated Irrigation Benefits Programme (AIBP) in the year 1996-97 to provide Central Assistance to major/medium irrigation projects in the country, with the objective to accelerate implementation of such projects which were beyond resource capability of the States or were in advanced stage of completion.

- Priority was given to those projects which were started in Pre-Fifth and Fifth Plan period and also to those which were benefiting Tribal and Drought Prone Areas.
- After launch of PMKSY in 2015-16, AIBP became a part of PMKSY.
- Since its inception, 297 Irrigation / Multi-Purpose Projects have been included for funding under AIBP.

Source: TMH Ramesh Singh

Q.2) Consider the following statements regarding Global Coalition for Disaster Resilient Infrastructure (CDRI):

1. It envisions enabling measurable reduction in infrastructure losses from disasters and extreme climate events.
2. It is launched by French Government.

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 Prime Minister of India launched the Coalition for Disaster-Resilient Infrastructure (CDRI) at the UN Secretary-General's Climate Action Summit in New York, US.

- The fledgling partnership has a secretariat in Delhi, supported by the UN Office for Disaster Risk Reduction (UNDRR), to enable knowledge exchange, technical support and capacity building.
- CDRI's mission is to rapidly expand the development of resilient infrastructure and retrofit existing infrastructure for resilience, and to enable a measurable reduction in infrastructure losses.
- Its mission statement notes that, in recent weather and climate-related disasters, up to 66% of public sector losses were related to infrastructure damage.

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- The partnership will be working in the areas of governance and policy, emerging technology, risk identification and estimation, recovery and reconstruction, resilience standards and certification, finance, and capacity development.

Source: The Hindu

Q.3) Consider the following statements regarding 'Rural Infrastructure Promotion Fund' (RIPF):

1. It has been created by NABARD.
 2. It has been set up with a corpus of Rs. 500crore.
- 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: NABARD has created a separate fund titled 'Rural Infrastructure Promotion Fund' (RIPF) to support programs and activities that promote rural infrastructure, with the ultimate objective of facilitating agriculture and rural development.

- RIPF has been set up with a corpus of Rs. 25 crore.
- The amount is contributed out of margin received by NABARD from a special window created under RIDF for funding the rural roads component of Bharat Nirman through National Rural Roads Development Agency (NRRDA).

Source: NABARD

Q.4) Consider the following statements regarding Foreign Portfolio Investment (FPI):

1. FPIs are short term investments and volatile in nature.
2. Portfolio investment does not offer control over the business entity in which the investment is made.

Which of the statements above given is/are correct?

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

ANS: C

Explanation: Foreign portfolio investment (FPI) refers to investing in the financial assets of a foreign country, such as stocks or bonds available on an exchange.

- This type of investment is at times viewed less favorably than direct investment because portfolio investments can be sold off quickly and are at times seen as short-term attempts to make money, rather than a long-term investment in the economy.
- Portfolio investment typically has a shorter time frame for investment return than direct investment.
- As with any equity investment, foreign portfolio investors usually expect to quickly realize a profit on their investments.
- Unlike direct investment, portfolio investment does not offer control over the business entity in which the investment is made.

Source: TMH Ramesh Singh

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Q.5) The term 'Commanding heights of Indian economy' is related to which of the following?

- a) Public Sector Undertakings
- b) Agriculture
- c) Public Sector Banks
- d) Foreign capital

ANS: A

Explanation: India's first Prime Minister Jawaharlal Nehru, inspired by the then Soviet Union-pioneered model of state sponsored growth, who mooted the idea of placing the government—and within it the state-owned and state-run PSUs—as the commanding heights of the Indian economy.

It was documented in the Industrial Policy Resolution of 1956 and found articulation in the benchmark Second Five Year Plan. Till the beginning of the 1980s, the PSUs continued to be the commanding heights.

Source: TMH Ramesh Singh

Q.6) With reference to the “National Infrastructure Pipeline (NIP)”, which of the following statements is/are correct?

1. It is launched for the period of 10 years starting from 2020 to 2030.
 2. It is jointly funded by the Central Government, State Government, and the private sector.
- 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: GoI launched the National Infrastructure Pipeline (NIP) for the FY 2020-2025 to facilitated world class infrastructure projects to be implemented.

- This first of its kind initiative will boost the economy, generate better employment opportunities, and drive the competitiveness of the Indian economy.
- It is jointly funded by the Central Government, State Government, and the private sector.
- The NIP was launched with the projected infrastructure investment of 111 lakhcrore (\$1.5 trillion) during the period 2020-2025.
- The sectors like energy, roads, urban infrastructure, railways have a major share in the NIP.

Source: Economic Survey 2020 – 2021

Q.7) Consider the following statements:

1. In India, private investment in infrastructure has come mainly in the form of Public Private Partnerships (PPPs).
2. The Government of India set up the Public Private Partnership Appraisal Committee (PPPAC) responsible for the appraisal of PPP projects in the Central sector and State sector.

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

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ANS: A

Explanation: In India, private investment in infrastructure has come mainly in the form of Public Private Partnerships (PPPs).

- PPPs help in addressing the infrastructure gap as well as improve efficiency in infrastructure service delivery.
- The GoI set up the Public Private Partnership Appraisal Committee (PPPAC) responsible for the appraisal of PPP projects in the Central sector.
- During FY20, PPPAC recommended 5 projects with total project cost of ₹ 4,321 crore.
- Out of these 5 projects, 4 are railway sector projects (passenger train projects) and 1 is port sector project.
- In FY21, PPPAC recommended 7 projects with total project cost of ₹ 66,600.59 crore. Out of these 7 projects, 1 is a telecom sector project, 3 are railway sector projects (2 station redevelopment projects & 1 passenger train project), 2 are MHA sector projects (Eco-tourism projects) and 1 is port sector project.

Source: Economic Survey 2020 – 2021

Q.8) Which of the following is/are eligibility criteria to be considered for grant of “Maharatna status” to Central Public Sector Enterprise (CPSE)?

1. Having Navratna status.
2. Average annual turnover of more than Rs. 25,000crore, during the last 3 years.
3. Average annual net worth of more than Rs. 15,000crore, during the last 3 years.

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: The CPSEs fulfilling the following criteria are eligible to be considered for grant of Maharatna status.

- Having Navratna status.
- Listed on Indian stock exchange with minimum prescribed public shareholding under SEBI regulations.
- Average annual turnover of more than Rs. 25,000crore, during the last 3 years.
- Average annual net worth of more than Rs. 15,000crore, during the last 3 years.
- Average annual net profit after tax of more than Rs. 5,000crore, during the last 3 years.
- Should have significant global presence/international operations.

Source: TMH Ramesh Singh

Q.9) With reference to the “Hybrid Annuity Model (HAM)”, which of the following statements is/are correct?

1. It is a mix of Build-Operate-Transfer (BOT) and Engineering, Procurement and Construction (EPC) models.
2. Under HAM 50% of the project cost is born by the government.

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 India, the new HAM is a mix of BOT Annuity and EPC models.

As per the design, the government will contribute to 40% of the project cost in the first five years through annual payments (annuity). The remaining payment will be made on the basis of the assets created and the performance of the developer.

Source: TMH Ramesh Singh

Q.10) Which of the following statements is/are correct about “India Infrastructure Finance Company Ltd (IIFCL)”?

1. It is wholly owned by Government of India.
2. It provides long-term financial assistance to viable infrastructure projects.

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: IIFCL is a wholly-owned Government of India Company set up in 2006 to provide long-term financial assistance to viable infrastructure projects through the Scheme for Financing Viable Infrastructure Projects through a Special Purpose Vehicle called India Infrastructure Finance Company Ltd (IIFCL), broadly referred to as SIFTI.

- The sectors eligible for financial assistance from IIFCL are as per the Harmonized list of Infrastructure Sub-Sectors as approved by the Government and as amended from time to time.
- These broadly include transportation, energy, water, and sanitation, and communication, social and commercial infrastructure.

Source: TMH Ramesh Singh

Economy

Q.1) Which of the following is associated with the Protection of Literary and Artistic Works?

- a) Berne Convention
- b) Paris Convention
- c) Rotterdam Convention
- d) Stockholm Convention

ANS: A

Explanation: The importance of intellectual property was first recognized in the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886).

Both treaties are administered by the World Intellectual Property Organization (WIPO) (1967).

Source: WIPO

Q.2) The validity time period of a patent in India is how many years?

- a) 10 years
- b) 15 years
- c) 20 years
- d) Life – term

ANS: C

Explanation: The term of every patent in India is twenty years from the date of filing the patent application, irrespective of whether it is filled with provisional or complete specification.

However, in case of applications filed under the Patent Cooperative Treaty (PCT), the term of twenty years begins from the priority date.

Source: Sriram's IAS

Q.3) Which of the following is/are criteria for patentability?

- 1. It should be novel.
- 2. It should be capable of Industrial application.
- 3. It should be obvious.

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: B

Explanation: An invention is patentable subject matter if it meets the following criteria –

- It should be novel.
- It should have inventive step or it must be non-obvious
- It should be capable of Industrial application.
- It should not attract the provisions of section 3 and 4 of the Patents Act 1970.

Source: https://ipindia.gov.in/writereaddata/Portal/Images/pdf/Final_FREQUENTLY_ASKED_QUESTIONS_-PATENT.pdf

Q.4) Which of the following are can trademark in India?

1. Letter
2. Sound mark
3. Phrase
4. Logo

Select the correct answer using the codes given below:

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

ANS: D

Explanation: The process of brand trademark registration in India is now possible and convenient such that you can trademark any one of the below things or even a combination of the following:

- Letter
- Word
- Number
- Phrase
- Graphics
- Logo
- Sound Mark
- Smell or a mix of colors

Source: <https://cleartax.in/s/trademark-registration-procedure->

Q.5) “Madrid Agreement of 1881” is related to which of the following?

- a) Patents
- b) Trade Marks
- c) Trade Marks Industrial Designs
- d) Plant protection

ANS: B

Explanation: Madrid Agreement, 1881 – Governs the international recognition of trademarks.

Source: Sriram’s IAS

Q.6) “Budapest Treaty of 1980” is related to which of the following?

- a) Plant varieties
- b) Micro – organisms
- c) Literary works
- d) Music albums

ANS: B

Explanation: Budapest Treaty of 1980 – It made possible patenting for micro-organisms. Claimant is required to deposit his invention on micro-organisms with an Authority – ‘International depository of Micro-Organisms’ under WIPO.

Source: Sriram’s IAS

Q.7) Which of the following way/ways to protect geographical indication?

1. Special regimes of protection.
2. Using collective or certification marks.

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3. Methods focusing on business practices, including administrative product approval schemes.

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: There are three main ways to protect a geographical indication:

- so-called sui generis systems (i.e. special regimes of protection);
- using collective or certification marks; and
- methods focusing on business practices, including administrative product approval schemes.

Source: Sriram's IAS

Q.8) With reference to the Traditional Knowledge Digital Library, which of the following statements is/are correct?

- 1. It is collaboration between TISS and CSIR.
- 2. It has converted the database into five international languages in patent application formats.

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: Traditional Knowledge Digital Library is a collaboration – between the Council of Scientific and Industrial Research (CSIR) and the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (Dept. of AYUSH), Ministry of Health & Family Welfare, Government of India.

- It manages a database of knowledge that exists in various local languages such as Sanskrit, Urdu, Arabic, Persian and Tamil.
- TKDL has also converted the database into five international languages in patent application formats.
- So far, over 2lakh medicinal formulations have been transcribed and the database is present in 30 million A4-size pages.

Source: TKDL

Q.9) Consider the following statements regarding the Directorate General of Foreign Trade (DGFT) organization:

- 1. Its mandate is to formulating and implementing the Foreign Trade Policy with the main objective of promoting India's exports.
- 2. It is an attached office of the Ministry of Commerce and Industry.

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: Directorate General of Foreign Trade (DGFT) organization is an attached office of the Ministry of Commerce and Industry and is headed by Director General of Foreign Trade.

- Right from its inception till 1991, when liberalization in the economic policies of the Government took place, this organization has been essentially involved in the regulation and promotion of foreign trade through regulation.
- Keeping in line with liberalization and globalization and the overall objective of increasing of exports, DGFT has since been assigned the role of “facilitator”.
- The shift was from prohibition and control of imports/exports to promotion and facilitation of exports/imports, keeping in view the interests of the country.
- This Directorate, with headquarters at New Delhi, is responsible for formulating and implementing the Foreign Trade Policy with the main objective of promoting India’s exports.
- The DGFT also issues scrips/authorization to exporters and monitors their corresponding obligations through a network of 38 regional offices and an extension counter at Indore.

Source: TMH Ramesh Singh

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

Committee/Panel	:	Significance
1. Ranga Rajan Committee	:	Balance of Payments
2. Vijay Kelkar Committee	:	Goods & Service Tax
3. Tarapore Committee	:	Monetary policy

Select the correct answer using the codes given below:

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

ANS: C

Explanation: Besides, economic reforms in various sectors, various Committees were set up from time to time (by the Government of India and by RBI) to discuss policy issues related to international trade and balance of payments.

Some of the important Committees were –

- Committee on Export – Import Policies & Procedures (Alexander Committee, 1978),
- Committee on Trade policy (Abid Hussain Committee, 1984),
- High – level Committee on Balance of Payments (Rangarajan Committee 1993), and
- Committee on Capital Account Convertibility (Tarapore Committee I 1997 & Tarapore Committee II 2006).

In 2003, the Vajpayee government forms a task force under Vijay Kelkar to recommend tax reforms. In 2004, Vijay Kelkar, then advisor to the Finance Ministry, recommends GST to replace the existing tax regime.

Source: TMH Ramesh Singh

Economy

Q.1) Consider the following statements:

1. Counter-cyclical fiscal policy stabilizes the business cycle by being contractionary in good times and expansionary in bad times.
2. Pro-cyclical fiscal policy is the one wherein fiscal policy reinforces the business cycle by being expansionary during good times and contractionary during recessions.

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: D

Explanation: Indian Kings used to build palaces during famines and droughts to provide employment and improve the economic fortunes of the private sector.

- Economic theory, in effect, makes the same recommendation: in a recessionary year, Government must spend more than during expansionary times.
- Such counter-cyclical fiscal policy stabilizes the business cycle by being contractionary (reduce spending/increase taxes) in good times and expansionary (increase spending/reduce taxes) in bad times.
- On the other hand, a pro-cyclical fiscal policy is the one wherein fiscal policy reinforces the business cycle by being expansionary during good times and contractionary during recessions.

Source: Economic Survey 2020 – 2021

Q.2) “Ricardian Equivalence Proposition (REP)” is associated with which of the following?

- a) Foreign Trade
- b) Money Supply
- c) Government spending
- d) Industrial expansion

ANS: C

Explanation: Ricardian equivalence is an economic theory that says that financing government spending out of current taxes or future taxes (and current deficits) will have equivalent effects on the overall economy.

- This means that attempts to stimulate an economy by increasing debt-financed government spending will not be effective because investors and consumers understand that the debt will eventually have to be paid for in the form of future taxes.
- The theory argues that people will save based on their expectation of increased future taxes to be levied in order to pay off the debt, and that this will offset the increase in aggregate demand from the increased government spending.
- This also implies that Keynesian fiscal policy will generally be ineffective at boosting economic output and growth.
- This theory was developed by David Ricardo in the early 19th century and later was elaborated upon by Harvard professor Robert Barro.

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- For this reason, Ricardian equivalence is also known as the Barro-Ricardo equivalence proposition.

Source: Economic Survey

Q.3) Consider the following statements:

1. Credit ratings map the probability of default and therefore reflect the willingness and ability of borrower to meet its obligations.
2. India in last two decades never awarded A+ or A grade by international credit rating agencies.
3. At present India doesn't have Investment grade.

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: Credit ratings map the probability of default and therefore reflect the willingness and ability of borrower to meet its obligations.

- India's willingness to pay is unquestionably demonstrated through its zero sovereign default history.
- During most of the 1990s and mid 2000s, India's sovereign credit rating was speculative grade.
- India's credit rating was upgraded to investment grade by Moody's in 2004, Fitch in 2006 and S&P in 2007.

Table 1: India's Sovereign Credit Rating (1998-2020)

Date	S&P	Moody's	Fitch
June 1998		Ba2*	
October 1998	BB*		
March 2000			BB+*
November 2001			BB*
February 2003		Ba1*	
January 2004			BB+*
January 2004		Baa3	
February 2005	BB+*		
August 2006			BBB-
January 2007	BBB-		
November 2017		Baa2	
June 2020		Baa3	

*Speculative Grade; Green highlights ratings upgrade; Red highlights ratings downgrade, Black indicates first rating
Source: Compiled from S&P Global, Fitch and Moody's

Source: Economic Survey

Q.4) Consider the following statements:

1. India has highest hospitalization rate in the world after OECD countries.
2. India has one of the lowest levels of Out Of Pocket Expenditure in the world.

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

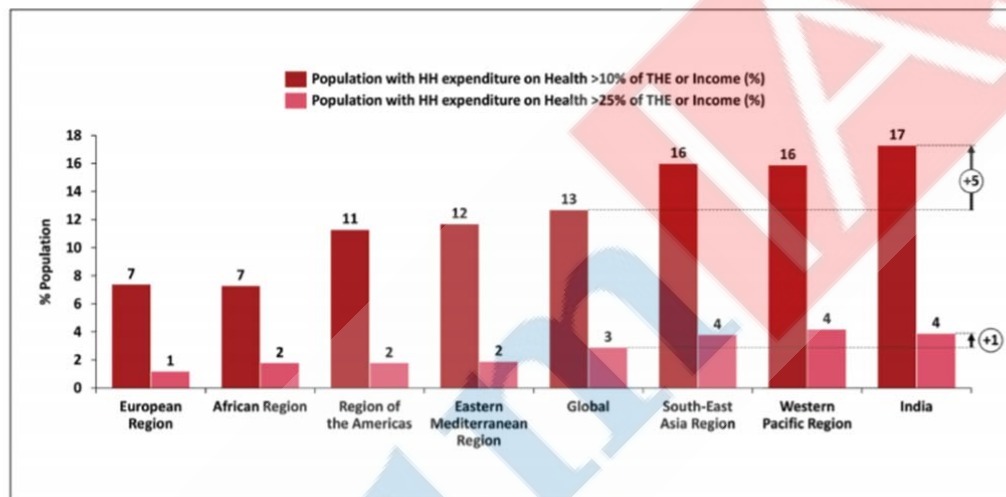
ANS: D

Explanation: At 3-4 per cent, the hospitalization rates in India are among the lowest in the world; the average for middle income countries is 8-9 per cent and 13-17 per cent for OECD countries.

High out-of-pocket health expenditures

5.17 As shown in Figure 3 and supported by Figure 7 below, India has one of the highest levels of OOPE in the world.

Figure 7: Comparison of Health Expenditure across different regions



Source: World Health Statistics 2020

Source: Economic Survey

Q.5) “World Health Statistics” is annually released by?

- a) WEF
- b) WHO
- c) Doctors without Borders
- d) Amnesty International

ANS: B

Explanation: WHO's annual World Health Statistics report present the most recent health statistics for the WHO Member States.

Source: TMH Ramesh Singh

Q.6) In which of the following indicator of ‘World Rule of Law Index’ published by the World Justice Project India has improved its ranking?

- a) Government regulations are effectively enforced
- b) Government regulations are applied and enforced without improper influence
- c) Administrative proceedings are conducted without unreasonable delay
- d) Due process is respected in administrative proceedings

ANS: D

Explanation: The 'World Rule of Law Index' published by the World Justice Project provides cross country comparison on various aspects of regulatory enforcement.

- The index has various sub-categories, which capture compliance to due processes, effectiveness, timelines, etc.
- In 2020, India's rank is 45 out of 128 countries in the category of 'Due process is respected in administrative proceedings' (proxy for following due process).

Table 1: India's rank in various categories of regulatory enforcement

	2015	2020
Regulatory Enforcement overall rank	69	74
Government regulations are effectively enforced	87	104
Government regulations are applied and enforced without improper influence	74	107
Administrative proceedings are conducted without unreasonable delay	75	89
Due process is respected in administrative proceedings	72	45
Number of Countries	102	128

Source: World Justice Project

Source: Economic Survey

Q.7) Which of the following scheme/schemes is/are Central Sponsored Scheme for Agriculture Sector?

1. Formation and promotion of Farmer Producer Organizations (FPOs).
2. Pradhan Mantri Fasal Bima Yojana.
3. Pradhan Mantri Kisan Samman Nidhi (Pm-Kisan).

Select the correct answer using the code given below:

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

ANS: B

Explanation: Pradhan Mantri Kisan Samman Nidhi (Pm-Kisan) is a Central Sector Scheme. It provides income support to all small and marginal landholding farmer families having cultivable land.

- PM Fasal Bima Yojana is a centrally sponsored scheme and it replaced all other existing insurance schemes except the Restructured Weather-Based Crop Insurance Scheme.
- Formation and Promotion of Farmer Producer Organizations (FPOs) is a Central Sector Scheme under Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW).

Source: Economic Survey

Q.8) Consider the following statements regarding the Pradhan Mantri Matsya Sampada Yojana (PMMSY):

1. It will be implemented over a period of 5 years from FY 2020-21 to FY 2024-25 in all States/Union Territories.
2. More than 50% of the total estimated investment of the PMMSY is earmarked for creation and up-gradation of fisheries infrastructure facilities.

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3. The scheme plans to reduce post-harvest losses from the present high of 25% to about 10% by modernizing and strengthening value chain.

Which of the statements given above is/are correct?

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

ANS: C

Explanation: The Pradhan Mantri Matsya Sampada Yojana (PMMSY) aims to enhance fish production to 220 lakh metric tons by 2024-25 from 137.58 lakh metric tons in 2018-19 at an average annual growth rate of about 9%.

- The Union Minister for Fisheries, Animal Husbandry and Dairying, Shri Giriraj Singh, said the ambitious scheme will result in doubling export earnings to Rs.1,00,000 crore and generate about 55 lakhs direct and indirect employment opportunities in fisheries sector over a period of next five years.
- Dedicating the PMMSY to fishers, fish farmers, fish workers, fish vendors and other stakeholders associated with the fisheries sector, Shri Giriraj Singh said that insurance coverage for fishing vessels is being introduced for the first time.
- The PMMSY will be implemented over a period of 5 years from FY 2020-21 to FY 2024-25 in all States/Union Territories.
- The Fisheries Minister said that about 42% of the total estimated investment of the PMMSY is earmarked for creation and upgradation of fisheries infrastructure facilities.
- Focus areas include Fishing Harbours and Landing Centers, Post-harvest and Cold Chain Infrastructure, Fish Markets and Marketing Infrastructure, Integrated Modern Coastal Fishing Villages and Development of Deep-sea Fishing.
- Besides creating critical fisheries infrastructure by attracting private investments in fisheries sector, the scheme plans to reduce post-harvest losses from the present high of 25% to about 10% by modernizing and strengthening value chain.
- Under the Swath Sagar plan, activities envisaged with a view to modernize the fisheries sector include promotion of Bio-toilets, Insurance coverage for fishing vessels, Fisheries Management Plans, E-Trading/Marketing, Fishers and resources survey and creation of National IT-based databases.

Source: The Hindu

Q.9) With reference to the India's public debt – to – GDP, which of the following statements is/are correct?

- 1. India's overall debt levels as a per cent of GDP are the highest amongst the group of G-20 countries.
- 2. Private debt – to – GDP is more than Government debt – to – GDP.

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

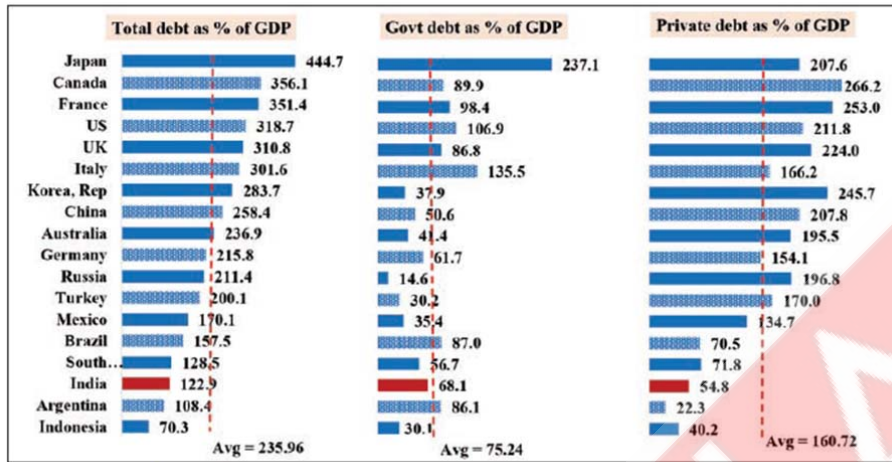
ANS: D

Explanation: A cross-country comparison of debt levels points out that for India, the government debt level as a proportion of GDP is equal to the median in the group of G-20 OECD countries and in the group of BRICS nations.

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India's overall debt levels as a per cent of GDP are the lowest amongst the group of G-20 OECD countries and also among the group of BRICS nations.

Figure 17: Debt-to-GDP ratio for India amongst the Rest of the world (2018)



Source: IMF Debt database

Source: Economic Survey

Q.10) According to International credit rating agencies, A+ or A1 rating means?

- a) Strong payment capacity
- b) Adequate payment capacity
- c) Likely to fulfill obligation
- d) High – risk obligation

ANS: A

Explanation:

Interpretation	Fitch and S&P	Moody's
Highest quality	AAA	Aaa
High quality	AA+	Aa1
	AA	Aa2
	AA-	Aa3
Strong payment capacity	A+	A1
	A	A2
	A-	A3
Adequate payment capacity	BBB+	Baa1
	BBB	Baa2
	BBB-	Baa3
Likely to fulfill obligations, on going uncertainty	BB+	Ba1
	BB	Ba2
	BB-	Ba3
High-risk obligations	B+	B1
	B	B2
	B-	B3
Vulnerable to default	CCC+	Caa1
	CCC	Caa2
	CCC-	Caa3
Near or in bankruptcy or default	CC	Ca
	C	C
	D	D

Source: IMF (2010)

Source: Economic Survey 2021

Economy

Q.1) Which of the following statements is/are NOT correct regarding India's Intended Nationally Determined Contributions (INDCs) contributions?

1. India has pledged to reduce the emissions intensity of its GDP by 33 to 35 per cent below 2005 levels by the year 2050.
2. 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2050.
3. Enhancing the forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030.

Select the correct answer using the codes given below:

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

ANS: B

Explanation: India has been taking several proactive climate actions to fulfill its obligations as per the principles of common but differentiated responsibilities and respective capabilities and equity.

- The Nationally Determined Contribution (NDC) submitted by the country has been formulated keeping in mind the developmental imperatives of the country and is on a "best effort basis".
- In its NDC, India has sought to reduce the emissions intensity of its GDP by 33 to 35 per cent below 2005 levels by the year 2030;
- Achieve 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2030;
- And enhance forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030.
- The other goals pertain to adoption of sustainable lifestyles based on traditional values of conservation and moderation, adaptation to climate change, clean economic development and environment friendly technology, etc.

Source: Economic Survey

Q.2) Consider the following statements regarding the Creative destruction:

1. It refers to the incessant product and process innovation mechanism by which new production units replace outdated ones.
2. Over the long run, the process of creative destruction accounts for over 50 per cent of productivity growth.
3. It was coined by Adam Smith.

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: Creative destruction refers to the incessant product and process innovation mechanism by which new production units replace outdated ones.

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- This restructuring process permeates major aspects of macroeconomic performance, not only long-run growth but also economic fluctuations, structural adjustment and the functioning of factor markets.
- Over the long run, the process of creative destruction accounts for over 50 per cent of productivity growth.
- At business cycle frequency, restructuring typically declines during recessions, and this adds a significant cost to downturns.
- Obstacles to the process of creative destruction can have severe short- and long-run macroeconomic consequences.
- It was coined by Joseph Schumpeter (1942), who considered it 'the essential fact about capitalism'.

Source: Economic Survey

Q.3) The World Development report is released by which of the following?

- a) Fraser Institute
- b) World Economic Forum
- c) World Trade Organization
- d) World Bank

ANS: D

Explanation: The World Development Report is an annual report published since 1978 by the International Bank for Reconstruction and Development or World Bank.

Each WDR provides in-depth analysis of a specific aspect of economic development.

Source: The Hindu

Q.4) Consider the following statements regarding the National List of Essential Medicines (NLEM):

1. The first National List of Essential Medicines of India was prepared and released in eighth plan.
2. The list is prepared by Ministry of AYUSH.

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 National list of essential medicines is one of the key instruments in balanced healthcare delivery system of a country which inter alia includes accessible, affordable quality medicine at all the primary, secondary, tertiary levels of healthcare.

- The first National List of Essential Medicines of India was prepared and released in 1996 (Eighth plan).
- The National List of Essential Medicines (NLEM), prepared by Ministry of Health and Family Welfare, is a list of medicines considered essential and high priority for India's health needs.
- DPCOs are issued by the Government, in exercise of the powers conferred under section 3 of the ECA to ensure that the medicines listed under NLEM are available at a reasonable price to the general public.

Source: The Hindu

Q.5) The 2030 agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs) and consists of how many associated targets?

- a) 129
- b) 139
- c) 169
- d) 189

ANS: C

Explanation: The 2030 agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs) and 169 associated targets encompasses a comprehensive developmental agenda integrating social, economic and environmental dimensions.

Source: Economic Survey

Q.6) The term “Smurfing” is related to which of the following?

- a) Trafficking
- b) Money laundering
- c) Round tripping
- d) Cyber attack

ANS: B

Explanation: Smurfing (also called structuring) is a method in which small sizes of money is kept in several number of bank accounts to hide the real identity of the real owner.

- This has been a very commonly used method of money-laundering.
- During the reform period, as more prudential norms of banking regulation evolved, such acts declined in India.

‘Smurfer’ (or ‘money mule’) is a person who does this.

Source: TMH Ramesh Singh

Q.7) “Leaving No One Behind” - is associated with which of the following?

- a) Sustainable Development Goals
- b) Intended Nationally Determined Contributions (INDCs)
- c) Millennium Development Goals
- d) International Solar Alliance

ANS: A

Explanation: Leave no one behind (LNOB) is the central, transformative promise of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). It represents the unequivocal commitment of all UN Member States to eradicate poverty in all its forms, end discrimination and exclusion, and reduce the inequalities and vulnerabilities that leave people behind and undermine the potential of individuals and of humanity as a whole.

Source: <https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind>

Q.8) The “Operation Twist” often seen in news is related to which of the following?

- a) Buy Buying foreign assets
- b) Foreign trade
- c) Lines of Credit
- d) Buy and sale of government securities

ANS: D

Explanation: The Reserve Bank of India (RBI) will simultaneously buy and sale government securities worth ₹10,000 crore each in December 2019 under its open market operations — a move aimed at managing the yields.

- The RBI will purchase the longer-term maturities, that are trading at a spread of 150 bps (basis points) over the repo rate, so that the yield of these papers will soften and sell the shorter duration ones.
- The central bank said it will buy ₹10,000 crore of 6.45% government bonds maturing in 2029 and simultaneously sell ₹10,000 crore of short-term bonds maturing in 2020.
- Operation Twist is a move taken by U.S. Federal Reserve in 2011-12 to make long-term borrowing cheaper.

Source: The Hindu

Q.9) The Protected Special Agricultural Zone (PSAZ), sometimes seen in news is related to which of the following state?

- a) Karnataka
- b) Tamil Nadu
- c) Maharashtra
- d) Madhya Pradesh

ANS: B

Explanation: The Tamil Nadu Government has introduced a Bill in the Legislative Assembly seeking to declare the Cauvery delta region a Protected Special Agriculture Zone (PSAZ).

- The Bill said, since certain non-farming activities were adversely affecting agriculture in the region, threatening the State's food security, "to protect the agriculture in this region, it is proposed to prohibit certain activities in the region."
- The Bill also sought to establish a 30-member Tamil Nadu Protected Agricultural Zone Authority headed by the Chief Minister to advise the government on various measures to protect and improve farming activities to increase farm production and farm productivity to serve the interest of farmers.
- The proposed PSAZ would comprise of Thanjavur, Tiruvarur and Nagapattinam districts and five blocks each in Cuddalore and Pudukkottai districts.

Source: The Hindu

Q.10) Which of the following crops are monitored under Market Intelligence and Early Warning System (MIEWS) Portal?

1. Rice
2. Onions
3. Wheat
4. Tomato
5. Potato
6. Fruits

Select the correct answer using the code given below:

- a) 2, 4 and 5 only
- b) 2, 3, 4 and 5 only
- c) 1, 2, 3, 4, 5 and 6
- d) 1, 2, 4 and 5 only

ANS: A

Explanation: The MIEWS Dashboard and Portal is a 'first-of-its-kind' platform for 'real time monitoring' of prices of tomato, onion and potato (TOP) and for simultaneously generating alerts for intervention under the terms of the Operation Greens (OG) scheme.

- This portal is a novel initiative of MoFPI leveraging IT tools and furthering the goals of Digital India.
- The portal would disseminate all relevant information related to TOP crops such as Prices and Arrivals, Area, Yield and Production, Imports and Exports, Crop Calendars, Crop Agronomy, etc in an easy to use visual format.

Source: <https://miews.nafed-india.com/>

ForumIAS

General Science

Q.1) Consider the following statements:

1. SODAR (Sonic Detection and Ranging) is used to measure the wind speed.
2. One of the defects of SODAR is relatively hard to transport and assemble.

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: As the wind energy industry expands and larger-scale projects are developed, wind turbines are becoming larger in rotor diameter as well as in hub height.

- Accordingly it is becoming difficult to accurately assess the wind resource with standard cup anemometers mounted on standard height (60m) meteorological (met) towers.
- For this reason, attention is being directed to other methods of wind speed measurement, such as SODAR (Sonic Detection and Ranging).
- Since the SODAR can measure wind speed as a function of height and is relatively easy to transport and assemble, the technology is very appealing.

Source: NCERT

Q.2) Which of the following event/event produces the “Gravitational Waves”?

1. Colliding black holes.
2. Massive stars exploding at the end of their lifetimes.
3. Super Cyclones.

Select the correct answer using the codes given below:

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

ANS: D

Explanation: The strongest gravitational waves are produced by cataclysmic events such as colliding black holes, supernovae (massive stars exploding at the end of their lifetimes), and colliding neutron stars.

Other waves are predicted to be caused by the rotation of neutron stars that are not perfect spheres, and possibly even the remnants of gravitational radiation created by the Big Bang.

Source: NCERT

Q.3) Which of the following is/are the examples of sublimation substances?

1. Menthol
2. Iodine
3. Dry ice

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: Familiar substances that sublime readily include iodine (shown below), dry ice (shown below), menthol, and camphor.

Sublimation is occasionally used in the laboratory as a method for purification of solids, for example, with caffeine.

Source: NCERT

Q.4) Which of the following statements is/are correct about “Oxides of Sulfur”?

1. It is a colorless gas that can be detected by taste and smell.
2. It is hard to dissolve in water.

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: Sulfur oxides (SO_x) are compounds of sulfur and oxygen molecules. Sulfur dioxide (SO₂) is the predominant form found in the lower atmosphere.

- It is a colorless gas that can be detected by taste and smell in the range of 1,000 to 3,000 micrograms per cubic meter (μg/m³).
- At concentrations of 10,000 μg/m³, it has a pungent, unpleasant odor. Sulfur dioxide dissolves readily in water present in the atmosphere to form sulfurous acid (H₂SO₃).
- About 30% of the sulfur dioxide in the atmosphere is converted to sulfate aerosol (acid aerosol), which is removed through wet or dry deposition processes.
- Sulfur trioxide (SO₃), another oxide of sulfur, is either emitted directly into the atmosphere or produced from sulfur dioxide and is rapidly converted to sulfuric acid (H₂SO₄).

Source: NCERT

Q.5) Which of the following statements is/are correct about “Styrene”?

1. It is a colorless liquid that evaporates easily and has a sweet smell.
2. It doesn't dissolve easily in water.
3. Low levels of styrene also occur naturally in a variety of foods such as fruits, vegetables, nuts, beverages, and meats.

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: Styrene is primarily a synthetic chemical. It is also known as vinyl benzene, ethenyl benzene, cinnamene, or phenyl ethylene.

- It's a colorless liquid that evaporates easily and has a sweet smell. It often contains other chemicals that give it a sharp, unpleasant smell.

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- It dissolves in some liquids but doesn't dissolve easily in water. Billions of pounds are produced each year to make products such as rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing.
- Most of these products contain styrene linked together in a long chain (polystyrene) as well as unlinked styrene.
- Low levels of styrene also occur naturally in a variety of foods such as fruits, vegetables, nuts, beverages, and meats.

Source: The Hindu

Q.6) Which of the following gases are created at the beginning of universe?

1. Hydrogen
2. Helium
3. Lithium

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: The only chemical elements created at the beginning of our universe were hydrogen, helium and lithium, the three lightest atoms in the periodic table. These elements were formed throughout the universe as a hot gas.

Source: NCERT

Q.7) Which of the following statements is/are correct about "Arthropod"?

1. They are everywhere and are the largest animal phylum.
2. Arthropods are cold blooded animals.

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: Arthropods are everywhere and are the largest animal phylum -- about 85% of all known animals in the world are part of this class.

- There are far more species of arthropods than there are species in all the other phylum's (phyla) combined.
- They are spiders, insects, centipedes, mites, ticks, lobsters, crabs, shrimp, crayfish, krill, barnacles, scorpions and many, many others.
- Arthropods are cold blooded -- which means, their body temperature depends on the temperature of the environment surrounding them.

Source: The Hindu

Q.8) PFAS (Per- and polyfluoroalkyl substances), is often seen in news is associated with which of the following?

- a) Organic Fertilizers
- b) Bio-pesticides
- c) E - Waste
- d) Cosmetics

ANS: D

Explanation: Researchers at the University of Notre Dame tested more than 230 commonly used cosmetics and found that 56% of foundations and eye products, 48% of lip products and 47% of mascaras contained fluorine — an indicator of PFAS (Per- and polyfluoroalkyl substances), so-called “forever chemicals” that are used in nonstick frying pans, rugs and countless other consumer products.

- Some of the highest PFAS levels were found in waterproof mascara (82%) and long-lasting lipstick (62%), according to the study published Tuesday in the journal Environmental Science & Technology Letters.
- Twenty-nine products with higher fluorine concentrations were tested further and found to contain between four and 13 specific PFAS chemicals, the study found. Only one item listed PFAS as an ingredient on the label.

Source: <https://www.thehindu.com/sci-tech/science/half-of-us-cosmetics-contain-toxic-chemicals-study/article34827360.ece>

Q.9) The polarimetry technique is recently in news is related to which of the following?

- a) Optical activity
- b) Measuring ozone
- c) Electricity measurement
- d) Pollen Carbon Dating method

ANS: A

Explanation: Polarimetry is a sensitive, nondestructive technique for measuring the optical activity exhibited by inorganic and organic compounds.

- A compound is considered to be optically active if linearly polarized light is rotated when passing through it.
- A team of astronomers has discovered that the closest known brown dwarf, Luhman 16A, shows signs of cloud bands similar to those seen on Jupiter and Saturn.
- The researchers used an instrument on the Very Large Telescope in Chile to study polarised light from the Luhman 16 system. Polarisation is a property of light that represents the direction that the light wave oscillates.
- The polarimetry technique is not limited to brown dwarfs. It can also be applied to exoplanets orbiting distant stars. The atmospheres of hot, gas giant exoplanets are similar to those of brown dwarfs.

Source: The Hindu

Q.10) Consider the following statements regarding the Black Hole:

1. A black hole is a place in space where gravity pulls so much that even light cannot get out.
2. The super-massive black hole at the center of the Milky Way galaxy is called Sagittarius A.
3. The Sun is not a big enough star to make a black hole.

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: D

Explanation: A black hole is a place in space where gravity pulls so much that even light cannot get out. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying.

- The largest black holes are called "supermassive." These black holes have masses that are more than 1 million suns together. Scientists have found proof that every large galaxy contains a supermassive black hole at its center.
- The supermassive black hole at the center of the Milky Way galaxy is called Sagittarius A. It has a mass equal to about 4 million suns and would fit inside a very large ball that could hold a few million Earths.
- Even if a black hole the same mass as the sun were to take the place of the sun, Earth still would not fall in.
- The black hole would have the same gravity as the sun. Earth and the other planets would orbit the black hole as they orbit the sun now.
- The sun will never turn into a black hole. The sun is not a big enough star to make a black hole.

Source: NCERT and The Hindu

Revision

Q.1) Which of the following statements is/are correct about “Quality Council of India (QCI)”?

1. It is a non-profit autonomous society registered under Societies Registration Act XXI of 1860.
2. The Quality Council of India (QCI) is headed by Minister of Commerce and Industry.

Select the correct answer using the code given below:

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

ANS: A

Explanation: The Quality Council of India (QCI) is a pioneering experiment of the Government of India in setting up organizations in partnership with the Indian industry.

- A committee which included various interested ministries and stakeholders including industries was established to make suitable recommendations.
- The work was coordinated by the then Department of Industries (Department of Industrial Policy and Promotion) and the recommendations were submitted to the Cabinet in 1996.
- Key recommendations included the Need for establishing an organization jointly by the Government and the industry and the need for the organization to be self-sustaining and be away from the government.
- Accepting the recommendations, the Cabinet Committee decided to set up Quality Council of India as a non-profit autonomous society registered under Societies Registration Act XXI of 1860 to establish an accreditation structure in the country and to spread quality movement in India by undertaking a National Quality Campaign.
- QCI is governed by a Council comprising of 38 members including the Chairman and Secretary General.
- The Council has an equal representation of Government, Industry and other Stakeholders. The chairman of QCI is nominated by Prime Minister of India and present chairman of QCI is Mr. Adil Zainulbhai.

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

Q.2) Which of the following industries is/are part of eight core industries?

1. Coal
2. Crude oil
3. Refinery products
4. Textiles

Select the correct answer using the code given below:

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

ANS: C

Explanation: The Index of Eight Core Industries measures the performance of eight core industries i.e., Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. The industries included in the Index of Eight Core Industries comprise 40.27 per cent weight in the Index of Industrial Production (IIP).

Table 3: Growth in the production of Eight Core Industries (in per cent)

Sector	Weight	2016-17	2017-18	2018-19	2018-19 (April- November)	2019-20 (April- November)
Coal	10.3	3.2	2.6	7.4	9.0	-5.3
Crude Oil	9.0	-2.5	-0.9	-4.1	-3.6	-5.9
Natural Gas	6.9	-1.0	2.9	0.8	-0.7	-3.1
Refinery Products	28.0	4.9	4.6	3.1	5.3	-1.1
Fertilizers	2.6	0.2	0.0	0.3	-1.3	4.0
Steel	17.9	10.7	5.6	5.1	3.6	5.2
Cement	5.4	-1.2	6.3	13.3	14.2	0.0
Electricity	19.9	5.8	5.3	5.2	6.6	0.7
Overall Index	100	4.8	4.3	4.4	5.1	0.0

Source: Office of the Economic Adviser, DPIIT

Source: Economic Survey

Q.3) The Bank rate at which the Reserve Bank of India is ready to buy or rediscount bills of exchange or other commercial papers, the Bank Rate is published under which of the following act?

- Reserve Bank of India Act, 1934
- Banking Regulation Act, 1949
- State bank of India Act, 1955
- Payment regulation Act, 2007

ANS: A

Explanation: Bank Rate is the rate at which the Reserve Bank is ready to buy or rediscount bills of exchange or other commercial papers.

- The Bank Rate is published under Section 49 of the Reserve Bank of India Act, 1934.
- This rate has been aligned to the MSF rate and, therefore, changes automatically as and when the MSF rate changes alongside policy repo rate changes.

Source: RBI

Q.4) The Essential Commodities (Amendment) Ordinance, 2020 provides that the central government may regulate the supply of certain food only under extraordinary circumstances. Which of the following is/are extraordinary circumstances?

- War
- Extraordinary price rise
- Famine

Select the correct answer using the codes given below:

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

ANS: D

Explanation: The Essential Commodities (Amendment) Ordinance, 2020 was promulgated on June 5, 2020.

- The Act empowers the central government to designate certain commodities (such as food items, fertilizers, and petroleum products) as essential commodities.
- The central government may regulate or prohibit the production, supply, distribution, trade, and commerce of such essential commodities.
- The Ordinance provides that the central government may regulate the supply of certain food items including cereals, pulses, potato, onions, edible oilseeds, and oils, only under extraordinary circumstances.
- These include: (i) war, (ii) famine, (iii) extraordinary price rise and (iv) natural calamity of grave nature.

Source: <https://prsindia.org/billtrack/the-essential-commodities-amendment-ordinance-2020>

Q.5) The Vikas engine is/are the workhorse for which of the following Launch Vehicles?

1. Satellite Launch Vehicle (SLV)
2. Augmented Satellite Launch Vehicle (ASLV)
3. Polar Satellite Launch Vehicle (PSLV)

Select the correct answer using the code given below:

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

ANS: C

Explanation: Vikas Engine is the workhorse liquid rocket engine powering the second stage of India's Polar Satellite Launch Vehicle (PSLV), second stage and the four strap on stages of Geosynchronous Launch Vehicle (GSLV) and the twin engine core liquid stage (L110) of GSLV Mk-III.

Source: ISRO

Q.6) The Double Asteroid Redirection Test (DART) mission is associated with which of the following space agency?

- a) ISRO
- b) JAXA
- c) NASA
- d) European Space Agency

ANS: C

Explanation: The Double Asteroid Redirection Test (DART) mission is directed by NASA to the Applied Physics Laboratory (APL) with support from several NASA centers: the Jet Propulsion Laboratory (JPL), Goddard Space Flight Center (GSFC), Johnson Space Center (JSC), Glenn Research Center (GRC), and Langley Research Center (LRC).

- DART is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid.
- DART will be the first demonstration of the kinetic impactor technique to change the motion of an asteroid in space.
- The DART mission is in Phase C, led by APL and managed under NASA's Solar System Exploration Program.

Source: <https://www.nasa.gov/planetarydefense/dart>

Q.7) Which of the following is/are mission/missions related to Mars Planet?

1. Maven
2. In – sights Lander
3. Curiosity rover

Select the correct answer using the code given below:

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

ANS: D

Explanation: Mars Missions by NASA:

- Mariner
- Mars Resonance Orbiter
- Phoenix
- MAVEN
- In-Sights Lander
- Curiosity Rover

Source: NASA

Q.8) Consider the following statements regarding the IndiGen programme:

1. It aims to undertake whole genome sequencing of thousand Indian individuals representing diverse ethnic groups from India.
2. It is funded by the Council for Scientific and Industrial Research (CSIR).

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: IndiGen programme aims to undertake whole genome sequencing of a thousand Indian individuals representing diverse ethnic groups from India.

- The objective is to create a pilot dataset to enable genetic epidemiology of carrier genetic diseases towards enabling affordable carrier screening approaches in India.
- We also hope to mine allele frequencies for genetic variants for estimating population scale prevalence for diverse clinical applications.
- The human genome data sets would also be utilized for prioritizing Pharmacogenomics variants specific for Indian population for optimizing therapy and minimizing adverse events.
- IndiGen is funded by the Council for Scientific and Industrial Research (CSIR).

Source: The Hindu

Q.9) The Government of India launched a prestigious programme “National Optical Fibre Network (NOFN)” to provide broadband services to rural areas. On which principle the optical fibre works?

- a) Polarisation
- b) Total internal reflection
- c) Total internal refraction

d) Scattering

ANS: B

Explanation: Optical fibre is a device which works on the principle of total internal reflection by which light signals can be transmitted from one place to another with negligible loss of energy.

Source: NCERT

Q.10) Which of the following is/are New World Monkeys?

1. Tamarins
2. Macaques
3. Baboons

Select the correct answer using the code given below:

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

ANS: A

Explanation: The monkeys are divided into two main groups—Old World and New World monkeys. The term “old world” refers to the areas (Europe, Africa, and Asia) known to the Europeans prior to the discovery of the “new world” (the Americas).

- New World monkeys are members of five different primate families (Callitrichidae, Cebidae, Aotidae, Pitheciidae, and Atelidae) and consist of almost exclusively arboreal (tree-dwelling) species like marmosets, tamarins, capuchins, and spider monkeys.
- Old World monkeys belong to the family Cercopithecidae and consist of species such as macaques, baboons, and vervet monkeys.
- These monkeys spend much more of their time on the ground, but can be found in habitats ranging from the rainforest to the savannah to the mountains.

Source: NCERT