

10 PM Current Affairs Quiz Compilation

7th to 12th February, 2022

PRELIMS

Q.1) Which of the following statements best describes “Renewable Purchase obligation”?

- a) It is a policy instrument that requires distribution companies, energy producers and certain consumers to obtain a share of their electricity from renewable sources
- b) It refers to practices and policies undertaken by corporations established in India to increase their investment in renewable energy that will have a positive influence on the environment.
- c) It allows a country with an emission-reduction or emission-limitation commitment to implement a project in the renewable energy sector.
- d) It is a fee to be paid by an Individual to stop their personal vehicle from getting scrapped after it has failed the fitness test as announced in the recently released voluntary vehicle scrapping policy.

Answer-a

Renewable purchase obligation(RPOs) are a policy instrument to ensure the uptake of renewable energy. They require Distribution companies(discoms), energy producers and certain consumers to obtain a share of their electricity from renewable sources. As renewable deployment remains highly concentrated in a few resource-rich states.

Enabling greater inter-regional transfer of RE can help reduce the financial burden on discoms. This can be done through the physical transfer of power through grid interconnections, or through the mechanism of tradable renewable energy certificates.

Source- [Article](#)

Q.2) If the Reserve Bank of India lowered the interest, what will happen to the previously issued bonds in India, if all the other things remain constant in the economy?

- a) This will lead to an increase in bond prices
- b) The par value of bonds will increase
- c) Nothing will change because bonds are unaffected by interest rates
- d) The information provided is insufficient to reach any conclusion.

Answer-a

The price of previously issued bonds and the interest rate are inversely related. When the interest rate decreases, the return to previously issued bonds increases. This will make bonds more attractive, their demand will increase, and thus their price will also increase.

The Par value of the bond is different from the price of the bond. Par value is the “face value” of the bond. This is the amount that a bond issuer has agreed to pay the bondholder at some point in the future. This amount is set in advance and does not change in response to changes in interest rates or any other change in macroeconomic variables.

Source- [Article](#)

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Q.3) Arrange the Following hill ranges from South to North

1. Palkonda Hills
2. Cardamom Hills
3. Baba budan hills
4. Nallamalla hills

Select the correct answer using the code given below.

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

Answer-c

Source- [Article](#)

Q.4) Some of the phenomenon can be very harmful for the health of the ecosystem. Which of the following scenarios will lead to a Negative change to an ecosystem?

1. Occurrence of frost in the Place having lot of budding plants and flowers
2. Around thousands of Siberian cranes resting for around a week at a large lake during their annual migration.
3. Failure of a large old dam led to flooding of nearby fields, vegetated by grasses, herbs, and other non-woody plants.

Select the correct answer from below

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

Answer-a

Seasonal weather fluctuations, such as a frost, may put stress on organisms in an ecosystem. An annual migration occurs every year, which means the event is likely part of normal ecosystem functioning and is largely beneficial for the health of the ecosystem. This makes statement b wrong.

Ecological disturbances, such as flooding, can alter an ecosystem so much that the ecosystem will no longer return to its original state.

Source- [Article](#)

Q.5) Which of the following was/were the important features of the Bhakti movement in India?

1. Equality of all people with the rejection of the ideas of the caste system
2. It evoked shared religiosity pursuit of spiritual ideas without the overhead of institutional superstructures.
3. It liberated poetry from singing the praises of kings and introduced spiritual themes.

Select the correct answer using the code given below.

- a) 1 and 3 only
- b) 2 and 3 only
- c) All of the above
- d) 3 only

Answer-c

As a social movement, the Bhakti movement challenged **caste hierarchy**, **emphasized the individual's direct connection to god** without the need for institutional superstructures. It provided possibility of salvation for all through good deeds and simple living. As a literary movement, it **liberated poetry from singing the praises of kings and introduced spiritual themes**.

Source- [Article](#)

Q.6) With reference to Ancient monuments in India, consider the following statements:

1. According to the Ancient Monuments and Archaeological Sites and Remains Act, ancient monument means any structure, erection or monument, cave, rock sculpture, inscription or monolith, which is of historical, archaeological or artistic interest provided it has been in existence for not less than fifty years.
2. Only State government in which the monument is located can declare it of national importance.

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

Answer-d

In the Ancient Monuments and Archaeological Sites and Remains Act (AMASR Act), ancient monument means any structure, erection or monument, or any tumulus or place of interment, or any cave, rock sculpture, inscription or monolith, which is of historical, archaeological or artistic interest provided it has been in existence for not less than one hundred years. Definition of monument in the Act, also includes the remains or the site of an ancient monument.

Central Government is of the opinion that any ancient monument is of national importance it issues a notification (preliminary) in the Official Gazette, of its intention to declare such ancient monument to be of national importance.

Source- [Article](#)

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Q.7) With reference to Coal sector in India, consider the following statements:

1. India is the second largest coal producer in the world and has fifth largest reserves of coal that may last 100 years.
2. India is self-sufficient in coal
3. Commercial mining allows the private sector to mine coal commercially without placing any end-use restrictions.

Which of the statements given above is/are correct?

- a) 1 only
- b) 1 and 2 only
- c) 1 and 3 only
- d) All of the above

Answer-c

Despite India being world's second largest coal producer and being the 5th largest country in terms of coal deposits, with coal reserves which may last at least 100 years more, the country is unable to produce adequate quantity of coal to meet the requirement of domestic industry and development.

Commercial mining allows the private sector to mine coal commercially without placing any end-use restrictions. The private firms have the option of either gasification of the coal or exporting it. They can also use it in their own end-use plants or sell them in the markets.

Source- [Article](#)

GEOGRAPHY

Q.8) Sahibi river is a tributary of which of the following?

- a) Yamuna
- b) Narmada
- c) Jhelum
- d) Sutlej

Answer: a

- It is a tributary of Yamuna which originates from the Aravalli range in Rajasthan and flows through west and South Haryana into Delhi where it is also known as the Najafgarh drain.

Source: [Article](#)

Economy

Q.9) With reference to the recent announcement to allow the use of surety insurance bonds, consider the following statements:

1. Surety bond is a legally binding contract.
2. These bonds are mainly aimed at infrastructure development.

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

Answer: C

A surety bond is a legally binding contract entered into by three parties—the principal, the obligee, and the surety.

Surety bond is provided by the insurance company on behalf of the contractor to the entity which is awarding the project.

Surety bonds are mainly aimed at infrastructure development, mainly to reduce indirect cost for suppliers and work-contractors thereby diversifying their options and acting as a substitute for bank guarantee.

Source: [Indian Express](#)

History

Q.10) Consider the following statements.

1. He was a mentor for revolutionaries like Chandrasekhar Azad and Bhagat Singh.
2. He along with Rashbehari Bose attacked Viceroy Hardinge and injured him.
3. He was closely involved in the plans for the Ghadar Conspiracy.

Which of the following personality is referred in the statements above?

- a) Ram Prasad Bismil
- b) Sachindra Nath Sanyal
- c) Udham Singh
- d) Barindra Kumar Ghosh

Answer: B

Source: [AIR](#)

PRELIMS

Q.1) In the year 2020, Reserve Bank Constituted an Internal Working Group (IWG) to review the extant guidelines on ownership and corporate structure for Indian private sector banks. In light of this, which of the following are the apprehensions regarding allowing large corporate/industrial houses to promote banks

1. It will lower connected lending which is essential for a developing country like India to bridge inequality and improves financial inclusion
2. One of the reasons for Nationalisation of banks in 1969 was allegations of connected lending.

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

Answer-b

Connected lending involves the controlling owner of a bank giving loans to himself or his related parties and group companies at favourable terms and conditions. Business groups need financing, and they can get it easily with no questions asked if they have an in-house bank. In short, companies can use the bank as a “private pool of readily available funds”. Big business groups already account for a major chunk of non-performing assets (NPAs) in the banking system even without becoming promoters of a bank.

Corporate houses were active in the banking sector till five decades ago when the banks promoted by them were nationalised in the late sixties amid allegations of connected lending and misuse of depositors’ money.

Source- [Article](#)

Q.2) With reference to the Indian Pharmaceutical Industry, consider the following statements:

1. According to the statics from the last five years, India has been a net exporter of pharmaceutical goods.
2. India is a preferred destination for clinical trials due to a Homogenous patient pool and cost competitiveness.
3. More than 70% of India’s Active Pharmaceutical Ingredient (API) imports are sourced from China.

Which of the statements given above is/are correct?

- a) 1 only
- b) 1 and 3 only
- c) 2 and 3 only
- d) All of the above

Answer-b

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According to data from the World Trade Organisation, India ranked 3rd globally in terms of volumes of exports and 11th globally with respect to the value of exports in 2019.24,25 India is a net exporter of pharmaceutical goods. Between 2016 and 2020, India's pharmaceutical exports grew at a CAGR of 5.98% and amounted to USD 16.29 Billion in FY20.25 During the same period, Indian pharmaceutical imports grew at a CAGR of 9.21% and amounted to USD 2.3 Billion in FY20.

India is also a preferred destination for clinical trials due to a heterogeneous patient pool, cost competitiveness, a skilled labour pool, as well as rising costs in developed markets. Cost of clinical trials in India is 40%-60% lower than developed markets.2

India has been heavily dependent on China for APIs. In fact, up to 80% of India's API imports are sourced from China.

Source- [Article](#)

Q.3) Which of the following statements best describes "Regulatory Sandbox"?

- a) A joint initiative of United Nations Office and Drugs and Crime (UNODC) and the Shanghai Cooperation Organization (SCO) to control money laundering activities.
- b) A set of guidelines under the coastal Coastal Regulation Zone (CRZ) Notification 2018.
- c) It allows financial service providers to conduct tests for new financial innovations.
- d) None of the above

Answer- c

The Reserve Bank of India (RBI) set up an inter-regulatory Working Group (WG) to look into and report on the granular aspects of FinTech. One of the key recommendations of the WG was to introduce an appropriate framework for a regulatory sandbox (RS) within a well-defined space and duration where the financial sector regulator will provide the requisite regulatory guidance, so as to increase efficiency, manage risks and create new opportunities for consumers.

A regulatory sandbox (RS) usually refers to live testing of new products or services in a controlled/test regulatory environment for which regulators may (or may not) permit certain regulatory relaxations for the limited purpose of the testing. The RS allows the regulator, the innovators, the financial service providers (as potential deployers of the technology) and the customers (as final users) to conduct field tests to collect evidence on the benefits and risks of new financial innovations, while carefully monitoring and containing their risks.

Source- [Article](#)

Q.4) Consider the following statements:

- 1. It may result in a chain of effects across the whole food chain.
 - 2. Impacts tree species diversity and composition.
 - 3. Alters demographic and genetic structure of the species which are illegally traded.
- Which of the above is/are the possible environmental effects of illegal trade in Wildlife?

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

Answer-d

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A key function of a species within its ecosystem is its role as a food source for other species, and/or as a consumer of other species. A decline in the population size of a particular species therefore has the potential to result in a chain of effects across the whole food chain, and there are a number of well-documented examples of these so-called 'trophic cascades'

Seeds of the majority of tree species are dispersed by animals; loss of these animals will therefore have considerable impacts on tree species diversity and composition.

In some cases, the tendency of illegal hunters to target individuals with specific characteristics within a population may have a disproportionate effect in reducing the long-term viability of that population. For example, Logging has the tendency to remove the largest and most reproductively valuable trees, which has disproportionately negative impacts on regeneration.

Reproductive collapse in saiga antelope has been attributed to a strong sex ratio bias resulting from selective illegal hunting of adult males for their horns. The tendency of fisheries to target larger, older individuals may lead to demographic effects, impacts on migration or parental effects that may disrupt the ability of a population to withstand, or adjust to, climate change.

Source- [Article](#)

Q.5) With reference to the Coalition for Disaster Resilient Infrastructure (CDRI), consider the following statements:

1.It is an intergovernmental organization with the objective of promoting the resilience of infrastructure systems to climate and disaster risks.

2.The policies, standards and other outputs of CDRI would be binding on its members.

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

Answer-d

CDRI is a multi-stakeholder global partnership of national governments, UN agencies and programmes, multilateral development banks and financing mechanisms, the private sector, and academic and knowledge institutions. It is not an intergovernmental organization, which are ordinary treaty-based organizations.

Envisioned as a partnership, the CDRI is not organized around the notion of rights and obligations. However, national governments that endorse the Charter and become a member of the CDRI have a key role in setting its substantive agenda as well as in its governance. It may be noted that the policies, standards and other outputs of CDRI would not be binding on its members.

Source- [Article](#)

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Q.6) Consider the following phenomena:

1. Algal blooms in Wular lake
2. An Incident of oil spill in the Arabian sea
3. Acid mine drainage phenomenon from an abandoned coal mine of North east India

Which of the above is/are likely to be associated with a nonpoint source of pollution?

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

Answer-c

Nonpoint source pollution comes from diffuse sources rather than from a single identifiable source. However, when acid mine drainage seeping from a coal mine abandoned years ago contaminated nearby streams and rivers, this pollution comes from a single, identifiable source which is the mine.

Pollution from a variety of sources together could cause an algal bloom, such as in Lake Wular. Oil spill are a result of a single, identifiable oil spill into the environment due to some accident or mishandling.

Source- [Article](#)

Q.7) Which of the following statements best describes “Liquidity”?

- a) It refers to the uncertainty about the value of an asset.
- b) It can be defined as the process of investing in several different assets with unrelated risks
- c) The ability to convert a store of value to cash
- d) The amount that will be repaid at the end of a bond’s term

Answer-c

Liquidity is the ability to convert the value of an asset into purchasing power without losing much of its value. Cash is the most liquid of all assets because it can be used to purchase things. Other assets, such as bonds, must first be sold to use that wealth to buy something.

The practice of investing in different assets with unrelated risks is called diversification. When someone engages in diversification, they lower the overall risk of holding a collection of assets, even if the risk of each individual asset is unchanged.

The amount that will be repaid at the end of a bond’s term is its face value, which is sometimes also called par value.

Source- [Article](#)

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Q.8) With reference to regulation of media content in India, consider the following statements:

1. There are no specific laws on content allowed or prohibited in print and electronic media, radio, films or OTT platforms.
2. Before Information Technology Rules, 2021 the Information and Broadcasting Ministry had no powers to regulate internet content in 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

Answer: c

Both statements are correct.

- **Statement 1 is correct:** There are no specific laws on content allowed or prohibited in print and electronic media, radio, films or OTT platforms.
 - The content on any of these platforms has to follow the free speech rules of the country, Article 19(1) of the Constitution, while protecting the freedom of speech also lists certain “reasonable restrictions”.
 - Action can be taken if any of these restrictions is violated.
- **Statement 2:** Earlier, the I&B Ministry had the powers to regulate content across all sectors — TV channels, newspapers and magazines, movies in theatres and on TV, and the radio - barring the internet. But after the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, the power has been extended over internet content too, especially on digital news platforms and OTT platforms.

Source: [Article](#)

Science and Technology

Q.9) With reference to Artificial Neural Networks, consider the following statements:

1. It is a computational model that mimics the way nerve cells work in the human brain.
2. It is like other machine learning algorithms that process the numbers or organise data.

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

Answer: A

Recently, the global Artificial Neural Network (ANN) Market report was published. As per the current report, ANN Market to Set Phenomenal Growth from 2021 to 2028.

Statement 1 is correct: ANN is a computational model that mimics the way nerve cells work in the human brain. It is designed to simulate the way the human brain analyzes and processes information.

Statement 2 is incorrect: ANN is not like other machine learning algorithms that process numbers or organise data. Instead, it is an algorithm that learns from experience and repeated tasks performed by its users.

Source: [The Hindu](#)

Economy

Q.10) What is/are the advantages of promoting ropeways as a means of transportation?

1. Ideal for difficult, challenging terrains
2. Faster mode of transportation
3. No need for geological and environmental studies

Select the correct answer from the codes given below.

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

Answer: A

The major advantages of ropeways include,

- Ideal for difficult / challenging / sensitive terrain
 - Long rope spans: The system crosses obstacles like rivers, buildings, ravines, or roads without a problem.
 - Ropes guided over towers: Low space requirements on the ground, and no barrier for humans or animals.
- Environmentally friendly: Low dust emissions. Material containers can be designed so as to rule out any soiling of the environment.
- Faster mode of transportation: Owing to the aerial mode of transportation, ropeways have an advantage over roadway projects where ropeways can be built in a straight line, over a hilly terrain.
- Economical mode of transportation: Given that ropeway projects are built in a straight line over a hilly terrain, it also results in lower land acquisition costs. Hence, despite having a higher cost of construction per km than roadways, ropeway projects' construction cost may happen to be economical than roadways.

Statement 3 is incorrect: Ropeways may be environmentally less harmful in general but they are vulnerable in the fragile ecosystems like the Himalayas. Hence, they should be constructed only if geological studies and environmental impact assessment reports don't highlight any serious concerns.

Source: [PIB](#)

Science and Technology

Q.11) With reference to Active Pharmaceutical Ingredients (APIs), consider the following statements:

1. Fixed-dose combination drugs use multiple APIs.
2. Chemically active substances known as Excipients deliver the effect of APIs to one's system.

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

Answer: a

- **Statement 1 is correct:** Fixed-dose combination drugs use multiple APIs, while single-dose drugs like Crocin use just one API.
- **Statement 2 is incorrect:** Every medicine is made up of two main ingredients — the chemically active APIs and chemically inactive, excipients, which is a substance that delivers the effect of APIs to one's system.

Source: [Article](#)

PRELIMS

Q1) Consider the following statements:

1. Agroecology and natural farming can prevent farmer indebtedness.
2. It is important to use biofertilizers along with chemical fertilizers and organic manures.

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

Answer-c

Natural farming will reduce dependency on purchased inputs and will help to ease smallholder farmers from credits burden.

As, Biofertilizers are not replacement of fertilizers but can only supplement plant nutrient requirements. It is important to use biofertilizers along with chemical fertilizers and organic manures.

Source- [Article](#)

Q.2) Crustacean attach themselves to the body of a whale so that they can migrate to new feeding grounds. The whale is not helped or harmed by the barnacles. Which of the following statements most appropriately defines the type of ecological interaction exists between the whale and the Crustaceans

- a) Commensalism
- b) Parasitism
- c) Predation
- d) Mutualism

Answer-a

Commensalism is a long-term, close association between two species in which one benefits and the other is unaffected. In this case the **Crustaceans** benefit since Whale help them migrate to new feeding grounds, but the whale is unaffected by their presence.

In parasitism, one organism (the parasite) feeds off of another (the host) without killing it. The parasite benefits while the host is harmed.

In predation, a member of one species eats a member of another species. In this case, neither species eats the other.

In mutualism, both species benefit.

Source- [Article](#)

Q.3) With reference to the Phenomenon of photosynthesis, consider the following statements:

1. Water molecules are produced and released into the soil.
2. Carbon dioxide is converted into organic molecules which are stored in the producer.
3. Oxygen is produced and released into the atmosphere.

Which of the statements given above is/are correct?

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

Answer-c

Water molecules are used, not produced, during photosynthesis

Oxygen is released as a waste product during photosynthesis.

Carbon dioxide is used during photosynthesis to produce glucose, which is stored for use by the producer.

Source- [Article](#)

Q.4) Which of the following provisions of the Constitution of India have a bearing on the healthcare?

1. Directive principles of state policy
2. Eleventh schedule
3. Twelfth schedule

Which of the statements given above is/are correct?

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

Answer-d

The Directive Principles of State Policy in Part IV of the India Constitution provide a basis for the right to health. Article 39 (E) directs the State to secure health of workers, Article 42 directs the State to just and humane conditions of work and maternity relief, Article 47 casts a duty on the State to raise the nutrition levels and standard of living of people and to improve public health. Moreover, the Constitution does not only oblige the State to enhance public health, it also endows the Panchayats and Municipalities to strengthen public health under Article 243G.

Provisions related to health fall in 11th schedule and 12th schedule as subjects of Panchayats and Municipalities respectively. These include drinking water, health and sanitation, family welfare, women and child development, social welfare etc.

Source- [Article](#)

Q.5) Consider the following:

1. Real Interest rates were increased from 4% to 6%
2. Decreasing exports to some neighbouring countries
3. Increased investment in the textile sector of the country

Which of the above will lead to an increase in the real GDP of the economy?

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

Answer-b

A decrease in exports would lead to lower real GDP. An increase in net exports would lead to an increase in real GDP.

An increase in real interest rates would cause real GDP to decrease. Higher interest rates would discourage investment spending, which is included in real GDP.

This will have a positive impact as an increase in investment would lead to an increase in real GDP of because of the multiplier effect.

Source- [Article](#)

Q.6) In the context of India, FDI is prohibited in which of the following sectors?

1. Agricultural or plantation activities
2. Retail trading
3. Atomic energy

Which of the statements given above is/are correct?

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

Answer-a

Foreign investment in any form is prohibited in a company or a partnership firm or a proprietary concern or any entity, whether incorporated or not (such as Trusts) which is engaged or proposes to engage in the following activities:

- (i) Business of chit fund, or
- (ii) Nidhi Company , or
- (iii) Agricultural or plantation activities or
- (iv) Real estate business, or construction of farm houses
- (v) Trading in Transferable Development Rights (TDRs).

It is clarified that Real Estate Business does not include development of townships, construction of residential/commercial premises, roads or bridges. It is further clarified that partnership firms/proprietorship concerns having investments as per FEMA regulations are not allowed to engage in Print Media sector.

In addition to the above, investment in the form of FDI is also prohibited in certain sectors such as:

- (i) Retail Trading

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- (ii) Atomic Energy
- (iii) Lottery Business
- (iv) Gambling and Betting
- (v) Agriculture (excluding Floriculture, Horticulture, Development of seeds, Animal Husbandry, Pisciculture and Cultivation of vegetables, mushrooms etc. under controlled conditions and services related to agro and allied sectors) and Plantations (Other than Tea plantations)

Source- [Article](#)

Q.7) Consider the following statements:

1. Viruses are free-living cells that can live inside or outside a body, while bacteria are a non-living collection of molecules that need a host to survive.
2. There are some good bacteria as well as some good viruses

Which of the statements given above is/are correct?

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

Answer-b

On a biological level, the main difference is that bacteria are free-living cells that can live inside or outside a body, while viruses are a non-living collection of molecules that need a host to survive.

Many bacteria help us: living in our gut digesting and helping absorption of our food, fixing nitrogen and decomposing organic materials in soil. Similarly, not all viruses are bad—there are also beneficial viruses present in our gut, skin and blood that can kill undesirable bacteria and more dangerous viruses.

Source- [Article](#)

Environment

Q.8) With reference to the other effective area-based conservation measures (OECM) tag, consider the following statements:

1. It is conferred on areas which are outside protected areas like national parks and sanctuaries.
2. OECM measures achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity.
3. The tag is granted under the Man and the Biosphere Programme by UNESCO.

Which of the statements given above is/are correct?

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

Answer: a

- **Statement 1 is correct:** The tag is conferred upon areas that are outside protected areas like national parks and sanctuaries.
- **Statement 2 is correct:** An 'other effective area-based conservation measure' is defined by the Convention on Biological Diversity(CBD) as: *A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values*
- **Statement 3 is incorrect:** The tag is granted by the international Union for Conservation of Nature (IUCN).

Source: [Article](#)

Economy

Q.9) Consider the following agricultural practices

1. Poly culture
2. Agro-Forestry
3. Genetic diversification in monoculture

Which of the above practices is/are considered as crop diversification?

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

Answer: D

Crop diversification is a strategy applied to grow more diverse crops from shrinking land resources with an increase in productivity in the same arable land.

Various types of crop-diversifications are

Type of diversification	Nature of diversification	Potential benefit
Improved structural diversity	Makes crops within field more structurally diverse	Pest suppression
Genetic diversification in monoculture	Cultivation of mixture of varieties of same species in a monoculture	Disease suppression, Increased production stability
Diversify field with fodder grasses	Growing fodder grasses alongside of food/pulse/oilseed/vegetables	Pest suppression, opportunity to livestock farming
Crop rotations	Temporal diversity through crop rotations	Disease suppression, Increased production
Polyculture	Spatial and temporal diversity of crops	Insect, pest disease suppression, climate change buffering
Agro-forestry	Growing crops and trees together	Pest suppression and climate change buffering
Mixed landscapes	Development of larger-scale diversified landscapes through mixture of crops and cropping system with multiple ecosystems	Pest suppression, climate change buffering and increased production stability
Micro-watershed based diversification	Integration of crop with other farming components for year round income and employment generation, besides sustaining soil	Insect, pest and disease suppression, climate change buffering and increased production, employment and income

Source: [DTE](#)

Environment

Q.10) With reference to **marine heatwaves**, consider the following statements:

1. Most common drivers of marine heatwaves include ocean currents.
2. Marine heatwaves reduce the risk of deoxygenation and acidification.

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

Answer: A

Statement 1 is correct: Marine heatwaves are periods of extremely high temperatures in the ocean. The most common drivers of marine heatwaves include ocean currents which can build up areas of warm water and air-sea heat flux, or warming through the ocean surface from the atmosphere.

Statement 2 is incorrect: The impacts of marine heatwaves include

- Affect the structure of Ecosystem .
- Change Habitat Ranges of Certain Species
- Economic Losses
- Increase the Risk of Deoxygenation and Acidification

Source: [The Hindu](#)

ECONOMY

Q11). With reference to the Central Bank Digital Currency (CBDC) launch, consider the following statements:

1. It is like a wallet or an electronic purse, issued by a central bank.
2. Digital Rupee, once issued by RBI, could be exchanged for cash.

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

Answer: c

Both statements are correct.

- **Statement 1 is correct:** CBDC is just a wallet or an electronic purse, issued by a central bank. There are many such wallets operating in the Indian financial system. The CBDC will be one of them, but with a difference that it will be issued by the nation's central bank.
- **Statement 2 is correct:** The digital rupee could be exchanged for cash and will open new opportunities in the fintech sector.

Source: [Article](#)

PRELIMS

Q.1) With respect to Hydrogen, Consider the following Statements:

1. Storing hydrogen is a challenge because its energy content by volume is high
2. Currently Hydrogen is not used at a mass scale in any industrial process.

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

Answer-d

Hydrogen's energy content by volume is low. This makes storing hydrogen a challenge because it requires high pressures, low temperatures, or chemical processes to be stored compactly. This has been a limiting factor in its mass adoption as a fuel.

Currently, hydrogen is used mostly in oil refining and for the production of fertilisers.

Source- [Article](#)

Q.2) Which of the following best illustrates the concept of separation of power in the context of India Constitution?

- a) (a)Constitution lays the provision of Presidential Rule in case of state emergency.
- b) (b)Article 213 of the Indian Constitution gives power to the Governor to issue ordinance when state legislative assembly is not in session.
- c) (c)President and the Governor are not accountable to any court for exercising their powers and performance of duties in his office.
- d) (d)Election of Vice-President is done by the electoral members of both the houses.

Answer-c

Some Articles that Substantiate Doctrine of Separation of Power

- Article 50 of the Indian Constitution encourages the separation of judiciary from the executive in the states.
- Article 361 of the Indian Constitution specifies that the President and the Governor are not accountable to any court for exercising their powers and performance of duties in his office.

Rest of the options except statement c represent the Overlapping of powers between various organs of the system.

Source- [Article](#)

Q.3) Consider the following pairs:

Ecological level		Definition
1)Ecosystem	-	All of the living and nonliving factors in an environment
2)Community	-	A group of one species living in a given area
3)Biosphere	-	Anything that meets all of the characteristics of life

Which of the pairs given above are correctly matched?

- a) 1 only
- b) 3 only
- c) 1 and 2 only
- d) All of the above

Answer-a

The biosphere consists of the regions on Earth that can support life. Anything that meets all of the characteristics of life is an organism.

A community is all of the species living in a given area. A group of one species living in a given area is a population.

An ecosystem consists of all of the biotic (living) and abiotic (nonliving) factors in an environment.

Source- [Article](#)

Q.4) Which of the following will be appropriate monetary policy response in a severe recession?

- 1. 1.Increase government spending
- 2. 2.Buying bonds
- 3. 3.Raise taxes

Select the correct answer using the code given below.

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

Answer-b

Increasing government spending and raising taxes are examples of Fiscal policy not monetary policy.

Buying bonds is an appropriate monetary policy response to a recession because buying bonds is expansionary (i.e. leads higher real GDP). If the Central bank buys bonds in the open market, it increases the money supply in the economy by swapping out bonds in exchange for cash to the general public.

Source- [Article](#)

Q.5) Which of the following Provisions of Indian constitution are related to the concept of Gender equality?

1. Fundamental Duties
2. Directive principle of state policy
3. Fundamental rights

Select the correct answer using the code given below:

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

Answer-d

Fundamental duty- Article 51A (e)enjoins upon every citizen to renounce practices derogatory to the dignity of women.

Fundamental rights-

- Article 15(1) and (2)prohibits the state from discriminating against any citizen only on the basis of any one or more of the aspects such as religion, race, caste, sex, place of birth or any of them.
- Article 16 provides for equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.

Directive principles Of state policy-

- Article 39 requires the State to direct its policy towards securing for men and women equally the right to an adequate means of livelihood [Article 39(a)];, and equal pay for equal work for both men and women [Article 39(d)].
- Article 39A directs the State to promote justice, on the basis of equal opportunity and to promote free legal aid by suitable legislation or scheme or in any other way to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.

Source- [Article](#)

Q.6) Consider the following Statements:

- 1.Great Barrier Reef is the world's largest coral reef system situated on the north eastern coast of Australia
- 2.Phenomenon of El-nino causes droughts in India and floods in Australia.

Select the correct answer using the code given below:

1. 1 only
2. 2 only
3. Both 1 and 2
4. Neither 1 nor 2

Answer-a

Great Barrier Reef, world's largest coral reef complex, located in the Pacific Ocean off northeastern Australia.

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El-Nino increases the surface temperature of the sea and affects the movement of monsoon winds in the Indian Ocean and causes weak drought-like situation in the Indian subcontinent. It also causes droughts and leads to severe bushfire season in Australia.

Soucre- [Article](#)

Q.7) Consider the following Statements:

1. The Two plus two dialogue is held between the foreign and External affairs ministers of the two countries.
 2. India has held this dialogue with all of its QUAD partner countries.
- 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

Answer-b

The 2+2 dialogue is held between the foreign and defence ministers of two countries and is generally seen to be aimed at creating a mechanism under which the bilateral relationship takes a decisive strategic turn with greater integration of defence, security and intelligence apparatus.

India now has a 2+2 format dialogue mechanism on strategic and security issues with all three of its QUAD partners that is Australia, the US and Japan.

Source- [Article](#)

Science and Technology

Q.8) With reference to Fairbank Disease, consider the following statements

1. It is a rare genetic disorder which affects the growing ends of bones.
2. Patients usually require management of pain and orthopedic procedures.

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

Answer: c

Both statements are correct.

Fairbanks disease or multiple epiphyseal dysplasia (MED) is a rare genetic disorder (dominant form--1 in 10,000 births) which affects the growing ends of bones.

Bones usually elongate by a process that involves the depositing of cartilage at the ends of the bones, called ossification.

This cartilage then mineralizes and hardens to become bone. In MED, this process is defective. The Fairbank's disease (Multiple epiphyseal dysplasia) patient usually requires management of pain and orthopedic procedures, for which facilities are available at tertiary care institutions in India.

Source: [PIB](#)

Schemes and Programs

Q.9) Which of the following is/are the benefit of Early Childhood Care and Education?

1. Far greater economic returns than the similar investment in other phases of children.
2. Ensure optimal learning and development
3. Reduce multilingualism

Select the correct answer from the codes given below.

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

Answer: B

Early Childhood Care and Education can result in

1. Far greater economic returns than the similar investment in other phases of children.
2. Ensure optimal learning and development
3. Enhance multilingualism
4. Provide Foundation of future

Source: <https://blog.forumias.com/vojana-february-summary-ecce-teach-them-young/>

INTERNATIONAL RELATIONS

Q.10) With reference to Society for Worldwide Interbank Financial Telecommunication (SWIFT), consider the following statements:

1. It is merely a platform that sends messages and does not hold any securities or money.
2. It is owned and controlled by the Bank for International Settlements (BIS).

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

Answer: a

- Statement 1 is correct:** It is merely a platform that sends messages and does not hold any securities or money.
- Statement 2 is incorrect:** SWIFT is owned and controlled by its shareholders (financial institutions) representing approximately 3,500 firms from across the world.

Source: [Article](#)

PRELIMS

Q.1) With reference to Full employment, consider the following statements:

- 1.It is an economic situation in which all available labor resources are being used in the most efficient way possible.
- 2.It is a situation in which anyone who is willing and able to work can find a job.

Which of the statements given above is/are incorrect?

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

Answer-d

Full employment is an economic situation in which all available labor resources are being used in the most efficient way possible. Full employment embodies the highest amount of Skilled and unskilled labor that can be employed within an economy at any given time.

True full employment is an ideal—and probably unachievable—situation in which anyone who is willing and able to work can find a job, and unemployment is zero. It is a theoretical goal for economic policymakers to aim for rather than an actually observed state of the economy. In practical terms, economists can define various levels of full employment that are associated with low but non-zero rates of unemployment.

Source- [Article](#)

Q.2) With reference to Pardoning power of president, Consider the following statements:

1. Respite means delay allowed in the execution of a sentence especially that for a death sentence for a temporary period.
- 2.Remission means reducing the quantum or degree of punishment of the convicted person considering special circumstances.

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

Answer-d

A reprieve means a delay allowed in the execution of a sentence especially that for a death sentence for a temporary period. The purpose of it enables the guilty person to seek presidential pardon or any other legal remedy to prove himself innocent.

Respite which means reducing the quantum or degree of punishment of the convicted person considering special circumstances such as in the case of pregnancy, the death penalty may be commuted to imprisonment for life.

Remission means changing the quantum of the punishment without changing its nature. Section 432 of the Code of Criminal Procedure, 1973 provides the power to suspend or remit sentences of punishment by the appropriate government. It states that the appropriate

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government with or without conditions may at any time accept, suspend or remit the punishment for an offence wholly or any part of the punishment.

Source- [Article](#)

Q.3) With respect to carbon cycle, Consider the following statements:

1. Carbon cycle and global warming are intricately connected
2. It helps explain how energy moves through trophic levels of an ecosystem.
3. It describes how the adaptations of organisms change based on environmental pressures.

Select the correct answer from below

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

Answer-a

The carbon cycle ensures there is a balanced concentration of carbon in the different reservoirs on the planet. But a change in the amount of carbon in one reservoir affects all the others. Today, Carbon cycle is getting effected due to burning fossil fuels, which release large amounts of carbon dioxide into the atmosphere, and through land use changes that remove plants, which absorb carbon from the atmosphere.

Biogeochemical cycles like carbon cycle do not track changes in the adaptations of organisms. They also do not track how energy moves through tropic levels.

Food webs, rather than biogeochemical cycles, show how energy moves through an ecosystem.

Source- [Article](#)

Q.4) With reference to the Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India(FAME) scheme, consider the following statements:

1. There is emphasis on electrification of the public transportation in the scheme.
2. Ministry of electronics and information technology is the monitoring authority for the 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

Answer-a

Under the phase 2 of the scheme Emphasis on electrification of the public transportation that includes shared transport.

Department of Heavy Industries, the Ministry of Heavy Industries and Public Enterprises is the monitoring authority for the scheme.

Source- [Article](#)

Q.5) With reference to the Zero Budget Natural Farming, consider the following statements:

- 1.It completely avoids the use of inorganic fertilisers, pesticides, and herbicides.
- 2.Tilling is preferred less in this farming practice.

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

Answer-c

Zero Budget Natural Farming (ZBNF) technology uses locally available resources to manage soil nutrition, fertility, pests, and weeds. The technology completely avoids the use of inorganic fertilisers, pesticides, and herbicides. It emphasises the effective utilisation of water through specified methods and recommends less tilling, to produce higher yields. This farming practice asserts that ZBNF is resilient to climate change, reduces the cost of cultivation, and increases farmers' income.

Process does not prefer tilling as it is believed that plant nourishment should be left to nature. Nature has the capacity to take care of plants even if there is no human interference.

Source- [Article](#)

Q.6) Which of the following is an example of expansionary monetary policy?

1. Raising the reserve requirement
2. Central bank Buying bonds

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

Answer-b

Expansionary monetary policy is when a central bank uses its tools to stimulate the economy. That increases the money supply, lowers interest rates, and increases demand. It boosts economic growth. It lowers the value of the currency, thereby decreasing the exchange rate.

Buying bonds is a tool of expansionary monetary policy because buying bonds will lead to an increase in output. Buying bonds increases the money supply to decrease interest rates. When interest rates decrease, then output will increase.

Increasing the reserve requirement would be an example of *contractionary* monetary policy, not expansionary monetary policy.

Source- [Article](#)

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Q.7) Which of the following phenomenon has a role in formation of stars like the sun in our solar system?

1. From a collision between two massive planetary objects
2. From a collapse of a cloud of matter under the pressure of gravity
3. Presence of Black hole

Select the correct answer using the code given below:

- a) 1 only
- b) 1 and 3 only
- c) 1 and 2 only
- d) All of the above

Collisions between planetary objects do occur, and these collisions actually play a very important role in the formation of rocky planets. But collisions like this do not form stars.

When a cloud of matter, called a nebula, collapses in on itself, the atoms within it jostle each other. This eventually creates enough heat that the atoms fuse together and create a great deal of energy. This energy is the birth of a star.

Black holes can form when massive stars die, or collapse. So they cannot help in formation of stars.

Source- [Article](#)

ECONOMY

Q.8) With reference to Capital Gains and the Capital Gains Tax in India, consider the following statements:

1. Capital gains tax is levied on both financial and non-financial assets.
2. Raw materials held by a person for the purposes of business are not categorized as Capital Assets.

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

Answer: c

Both statements are correct.

- **Statement 1 is correct:** Capital Gains Tax is levied on the profits made on investments. It covers real estate, gold, stocks, mutual funds and various other financial and non-financial assets.
- **Statement 2 is correct:** Consumable stores or raw materials held for the purposes of business or profession are excluded from the category of capital assets.

Source: [Article](#)

SCIENCE AND TECHNOLOGY

Q.9) With reference to Solar flares/storms, consider the following statements:

1. Solar storms are magnetic plasma ejected at great speed from the solar surface.
2. All solar flares reach Earth, but only a few impacts space weather in near-Earth space and the upper atmosphere.

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

Answer: a

Statement 1 is correct: Solar storms are magnetic plasma ejected at great speed from the solar surface. They occur during the release of magnetic energy associated with sunspots ('dark' regions on the Sun that are cooler than the surrounding photosphere), and can last for a few minutes or hours.

Statement 2 is incorrect: Not all solar flares reach Earth, but solar flares/storms, solar energetic particles (SEPs), high-speed solar winds, and coronal mass ejections (CMEs) that come close can impact space weather in near-Earth space and the upper atmosphere.

Source : [Indian Express](#)

Q.10) With reference to International Thermonuclear Experimental Reactor (ITER), consider the following statements:

1. The ITER will use the isotopes of hydrogen called deuterium and tritium.
2. India is not a participating country of ITER.
3. Although there are many experimental tokamaks worldwide none has demonstrated net energy production more than the input.

Which of the statements given above is/are correct?

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

Answer: D

The ITER fusion reaction will use the isotopes of hydrogen called deuterium and tritium. Thirty-five countries, including India, Russia, the United States, the United Kingdom, China, European Union, are collaborating to jointly build the largest Tokamak as part of the International Thermonuclear Experimental Reactor (ITER).

Although there are many experimental tokamaks worldwide none has demonstrated net energy production more than the input.

Source: [The Hindu](#)

PRELIMS

Q.1) Consider the following Statements:

1. India's definition of the Indo-Pacific region stretches from the western coast of India to the Western Coast of North America
2. Indian ocean rim association is an inter-governmental organisation comprising more than 50 countries of the Indo pacific region.

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

Answer-d

The Indo-Pacific construct means different things to different people. For the US, it extends up to the west coast of India which is also the geographic boundary of the US Indo-Pacific command whereas for India it includes the entire Indian Ocean and the western Pacific as highlighted by Prime Minister Narendra Modi at his keynote speech at the Shangrila Dialogue in 2018.

Indian ocean rim association an inter-governmental organisation aimed at strengthening regional cooperation and sustainable development within the Indian Ocean region through its 22 Member States bordering the Indian Ocean and 9 Dialogue Partners.

India's definition of the Indo-Pacific region stretches from the western coast of North America to the eastern shores of Africa.

The members include Australia, Bangladesh, Comoros, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South-Africa, Sri Lanka, Tanzania, Thailand, United Arab Emirates, Maldives and Yemen.

Source-[Article](#)

Q.2) Consider the following:

1. Currency in circulation
2. Forex reserves
3. Government securities

Which of the above will qualify as the asset of the Reserve Bank of India?

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

Answer-b

A typical central bank balance sheet is somewhat like this-The liabilities side of it comprises the currency in circulation, commercial bank reserves (money kept by lenders with it) and

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government reserves (State balances kept with it). The asset side has forex reserves, government securities and gold.

Source- [Article](#)

Q.3) With reference to the End to End Encryption, consider the following statements:

1. When data is being transferred using this technique , only the sender and recipient can decrypt it with key.
2. The message does not pass through an intermediary server.

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

Answer-a

End to End encryption (E2EE) is a method of secure communication that prevents third parties from accessing data while it's transferred from one end system or device to another.

In E2EE, the data is encrypted on the sender's system or device, and only the intended recipient can decrypt it. As it travels to its destination through the server, the message cannot be read or tampered with by an internet service provider (ISP), application service provider, hacker or any other entity or service.

Source- [Article](#)

Q.4) Consider the following:

- 1.Mollusks
- 2.Green algae
- 3.Shark
- 4.Salmon fish

Arrange the following in the form of a food chain starting with the Primary producer?

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

Answer-b

Green algae is a primary producer, Mollusks are primary consumer, Salmon fish is secondary consumer while Large animals like whales, shark are always tertiary consumers.

Source- [Article](#)

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Q.5) Consider the following statements:

1. A Patent is a statutory right for an invention granted for a limited period of time to the patentee by the Government.
2. The term of a patent is 10 years under the Indian system.
3. An Indian Patent give protection to the patentee worldwide from the date on which the patent was granted.

Which of the statements given above is/are correct?

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

Answer-a

A Patent is a statutory right for an invention granted for a limited period of time to the patentee by the Government, in exchange of full disclosure of his invention for excluding others, from making, using, selling, importing the patented product or process for producing that product for those purposes without his consent.

The term of every patent granted is 20 years from the date of filing of application.

Patent protection is a territorial right and therefore it is effective only within the territory of India. There is no concept of global patent.

Source- [Article](#)

Q.6) Consider the following statements:

1. Labour Force Participation Rate (LFPR) is defined as the percentage of employed persons in the population.
2. Unemployment Rate (UR) is defined as the percentage of persons unemployed among the persons in the population.

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

Answer-d

Labour Force Participation Rate (LFPR): LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population.

Worker Population Ratio (WPR): WPR is defined as the percentage of employed persons in the population.

Unemployment Rate (UR): UR is defined as the percentage of persons unemployed among the persons in the labour force.

Source- [Article](#)

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Q.7) With respect to Continental shelves, Consider the following Statements:

1. They Provide one of the richest fishing grounds
2. They may form due to submergence of a part of a continent or relative rise in sea level

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

Answer-c

Following are some of the important features of continental shelves- Marine food comes almost entirely from continental shelves.

They provide the richest fishing grounds.

They are potential sites for economic minerals [20% of the world production of petroleum and gas comes from shelves. Polymetallic nodules (manganese nodules; concentric layers of iron and manganese hydroxides) etc. are good sources of various mineral ores like manganese, iron copper, gold etc..]

The shelf is formed mainly due to submergence of a part of a continent or relative rise in sea level and also Sedimentary deposits brought down by rivers.

Source- [Article](#)

Q.8) Operation Smiling Buddha sometimes seen in news is associated with?

- a) Testing of a Nuclear bomb
- b) Illegal human trafficking
- c) India-China war
- d) Cuban Missile crisis

Answer: a

- Operation Smiling Buddha was the assigned code name of India's first successful nuclear bomb test on 18 May 1974. The bomb was detonated on the army base Pokhran Test Range, in Rajasthan, by the Indian Army under the supervision of several key Indian generals.

Source: [Article](#)

SCIENCE AND TECHNOLOGY

Q.9) What is/are the advantage of nuclear fusion?

1. Produce more energy than coal, oil, gas or nuclear fission
2. High chance of meltdown
3. Do not emit harmful toxins like CO₂ or other greenhouse gases

Select the correct answer from the codes given below:

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

Answer: C

Statement 1 is correct: Gram for gram, thermonuclear power produces four million times more energy than burning coal. A kilogram of fusion fuel contains about 10 million times as much energy as a kilogram of coal, oil or gas e.g., if four grams of hydrogen can be fused into helium, it can light a 60-watt light bulb for over 100 years.

Fusion reactors produce four times more energy than nuclear fission reactions.

Statement 2 is incorrect: Any disturbance/malfunction will lead to the cooldown of plasma within seconds and the fusion reaction stops. Hence, they have a low risk of meltdown.

Statement 3 is correct: Nuclear fusion does not emit harmful toxins like CO₂ or other greenhouse gases. The only waste product from nuclear fusion is the harmless helium which is an inert and non-toxic gas.

Source: [11 MW in 5 sec: breakthrough in nuclear fusion, and why it is significant](#)

SCIENCE AND TECHNOLOGY

Q.10) With reference to Volatile Organic Molecules, consider the following statements.

1. VOCs does not produced in nature.
2. VOCs can drive the formation of other dangerous pollutants.
3. VOCs can irritate the eyes, nose and throat, damage body organs and cause cancer.

Which of the statements given above is/are correct?

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

Answer: D

Statement 1 is incorrect: Plants emit VOCs to attract pollinators, defend themselves from pests and predators and adapt to environmental stress.

Statement 2 is correct: VOCs can drive the formation of other dangerous pollutants. For instance, they react with sunlight and nitrogen dioxide to form ground-level ozone.

Statement 3 is correct: VOCs can irritate the eyes, nose and throat, damage body organs and cause cancer.

Source: [Electric vehicles can lower emissions of volatile organic compounds in India by 2030: Study](#)