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1. Economy

- 1) The Financial Stability Report by RBI looks at which of the following aspects?
1. Are the levels of bad loans (or non-performing assets) within manageable limits.
 2. Are different sectors of the economy able to get credit for economic activity.
 3. Do Indian banks (both public and private) have enough capital to run their operations.

Select the correct answer code:

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

Solution: d)

The FSR looks at questions like **do Indian banks (both public and private) have enough capital to run their operations? Are the levels of bad loans (or non-performing assets) within manageable limits? Are different sectors of the economy able to get credit (or new loans) for economic activity** such as starting a new business or buying a new house or car?

- 2) Consider the following statements.
1. RBI primarily factors in Wholesale inflation while making its bi-monthly monetary policy.
 2. A broad-based domestic and global economic recovery can lead to rise in inflation.

Which of the above statements is/are correct?

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

Solution: b)

RBI primarily factors in retail inflation while making its bi-monthly monetary policy.

A broad-based domestic and global economic recovery should improve aggregate demand, posing an upside risk to inflation.

- 3) Consider the following statements regarding Development Finance Institutions (DFIs).
1. Development Finance Institutions provide risk capital for economic development projects on non-commercial basis.
 2. In India, the first DFI was operationalised before Independence, with the setting up of the Industrial Finance Corporation (IFCI).
 3. During the pre-liberalised era, India had DFIs that were primarily engaged in development of industry in the country.

Which of the above statements is/are correct?

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

Solution: b)

A development finance institution (DFI) also known as a development bank is a financial institution that provides risk capital for economic development projects on non-commercial basis.

During the pre-liberalised era, India had DFIs which were primarily engaged in development of industry in the country.

In India, the first DFI was operationalised in 1948 with the setting up of the Industrial Finance Corporation (IFCI). Subsequently, the Industrial Credit and Investment Corporation of India (ICICI) was set up with the backing of the World Bank in 1955.

The Industrial Development Bank of India (IDBI) came into existence in 1964 to promote long-term financing for infrastructure projects and industry.

- 4) Participatory notes (P-notes) investments in the Indian market is allowed in which of the following instruments
1. Debt
 2. Equity
 3. Derivatives
 4. Hybrid securities

Select the correct answer code:

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

Solution: d)

P-notes are issued by registered FPIs to overseas investors who wish to be part of the Indian stock market without registering themselves directly. They, however, need to go through a due diligence process.

P-note investments in Indian markets – **equity, debt, hybrid securities and derivatives.**

- 5) Consider the following statements regarding National Small Savings Fund (NSSF).
1. All deposits under small savings schemes are credited to the Consolidated Fund of India.
 2. Some part of deposits in the fund is invested in special Government securities as per the norms decided by RBI.
 3. The transactions through NSSF does not impact the fiscal deficit of the Centre directly.

Which of the above statements is/are correct?

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

Solution: d)

A “National Small Savings Fund” (NSSF) in the Public Account of India has been established with effect from 1.4.1999.

All small savings collections are credited to this Fund. Similarly, all withdrawals under small savings schemes by the depositors are made out of the accumulations in this Fund. The balance in the Fund is invested in Central and State Government Securities. The investment pattern is as per norms decided from time to time by the Government of India.

The Fund is administered by the Government of India, Ministry of Finance (Department of Economic Affairs) under National Small Savings Fund (Custody and Investment) Rules, 2001, framed by the President under Article 283(1) of the Constitution. The objective of NSSF is to de-link small savings transactions from the Consolidated Fund of India and ensure their operation in a transparent and self-sustaining manner. Since NSSF operates in the public account, **its transactions do not impact the fiscal deficit of the Centre directly.** As an instrument in the public account, the balances under NSSF are direct liabilities and constitute a part of the outstanding liabilities of the Centre. The NSSF flows affect the cash position of the Central Government.

- 6) Consider the following statements regarding open-ended procurement policy.
1. The procurement of paddy and wheat by Government of India (GOI) is open ended.
 2. The main aim of open-ended procurement policy is to help farmers get remunerative price and prevent distress sale.
 3. Under the policy, the farmers must necessarily sell his/her produce at the MSP set by the Government.

Which of the above statements is/are correct?

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

Solution: b)

The procurement policy of Government of India (GOI) is open ended, under which paddy and wheat offered by farmers all over the country within the stipulated period (conforming to specifications prescribed in advance by GOI) are purchased for Central Pool at Minimum Support Price (MSP) by Food Corporation of India (FCI)/State Governments/State Government Agencies to **help farmers get remunerative price and prevent distress sell**. However, **if any producer/farmer gets better price in comparison to MSP, he/she is free to sell his/her produce in open market**. Coarse grains are procured at MSP by State Government as per the procurement plan prepared in consultation with FCI and approved by the Central Government.

- 7) Consider the following statements regarding the impact of External Aids on Indian economy.
1. It brings in foreign currency that is useful to bridge the Balance of payments (BoP) deficit.
 2. It causes crowding out effect in the domestic market, which is not favourable to the domestic borrowers.

Which of the above statements is/are correct?

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

Solution: a)

If external aid is a grant or coming without interest, no better way to finance the deficit, if we ignore their inflationary effects.

When the domestic market has limited amount of funds, and if the government desires to borrow a large share of it to finance the fiscal deficit, it tends to raise the demand for funds in the market. This shoots the market interest rate for the funds and causes problems to the domestic investors who now have to pay a higher interest rate to avail the same loan.

If the same money is borrowed from abroad, the crowding out effect doesn't occur.

- 8) Gross Domestic Capital Formation (GDCF), often seen in the Budget and Economic Surveys, essentially refers to
- a) Capitalization of the Banking sector
 - b) Money circulation in public hands
 - c) Direct Retail Investment in consumer goods sector
 - d) Creation of Infrastructure or durable economic assets

Solution: d)

- Capital is the produced means of production or it is called produced wealth by which more wealth is possible in the economy directly and indirectly.

- **Capital formation means creation of physical assets and non- physical capital consisting of public health efficiency, visible and no visible capital.**
- **Gross domestic capital formation is the addition to the capital stock within the domestic territory of a country during a year.**
- Gross domestic capital formation includes all expenses made by household, business people and Govt, adding new durable goods to the fixed capital stock of a country.
- These assets are in the form of infrastructure such as buildings, roads canals, bridges, means of transport, machinery and other equipments.

9) Consider the following statements regarding Bilateral investment treaty (BIT).

1. A bilateral investment treaty (BIT) is an agreement establishing the terms and conditions for private investment by nationals and companies of one state in another state.

2. The parties which sign BIT must establish their own dispute resolution mechanism and there is no provision for dispute resolution under the auspices of the International Centre for Settlement of Investment Disputes (ICSID).

3. BITs must compulsorily protect the environment, labour rights, social provisions or natural resources in the country where investments are made.

Which of the above statements is/are correct?

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

Solution: a)

A bilateral investment treaty (BIT) is an agreement establishing the terms and conditions for private investment by nationals and companies of one state in another state. This type of investment is called foreign direct investment (FDI). BITs are established through trade pacts.

The distinctive feature of many BITs is that they **allow for an alternative dispute resolution mechanism**, whereby an investor whose rights under the BIT have been violated could have recourse to international arbitration, **often under the auspices of the International Centre for Settlement of Investment Disputes (ICSID)**, rather than suing the host State in its own courts. This process is called investor-state dispute settlement (ISDS).

NGOs have spoken against the use of BITs, stating that they are essentially designed to protect foreign investors and do not take into account obligations and standards to protect the environment, labour rights, social provisions or natural resources.

10) Consider the following statements regarding Fiscal Deficit.

1. Fiscal deficit is reflective of the total borrowing requirements of the Government.

2. If the fiscal deficit ratio is too high, it implies that there is more amount of money left in the market for private entrepreneurs and businesses to borrow.

3. Higher fiscal deficit can lead to higher interest rates in the economy.

Which of the above statements is/are correct?

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

Solution: c)

Fiscal Deficit is “reflective of the total borrowing requirements of the Government”.

If the fiscal deficit ratio is too high, it implies that there is a lesser amount of money left in the market for private entrepreneurs and businesses to borrow.

Lesser amount of this money, in turn, leads to higher rates of interest charged on such lending.

So, simply put, **a higher fiscal deficit means higher borrowing by the government, which, in turn, mean higher interest rates in the economy.**

A high fiscal deficit and higher interest rates would also mean that the efforts of the Reserve Bank of India to reduce interest rates are undone.

11) Consider the following statements regarding Participatory Notes (P-Notes).

1. Participatory Notes are instruments that are issued by registered FIIs to overseas investors who want to invest in the stock markets in India.
2. They are also known as offshore derivative instruments.
3. The P-Note holder enjoy voting rights in relation to shares invested through the P - Notes.

Which of the above statements is/are correct?

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

Solution: c)

Participatory Notes, also called P-Notes or just PNs are instruments that are **issued by registered FIIs to overseas investors who want to invest in the stock markets in India**, without registering themselves with the market regulatory authority SEBI. PNs are not used within India but by investors abroad. Hence, they are also known as **offshore derivative instruments**. They are used by clients of FIIs who do not wish to directly participate in the stock market in India, but do it through the FIIs using PNs.

The P-Note holder also does not enjoy any voting rights in relation to security/shares referenced by the P-Note.

12) Buoyancy of tax refers to:

- a) Relationship between the changes in government's tax revenue growth and the changes in Investment.
- b) Relationship between the changes in government's tax revenue growth and the changes in Inflation.
- c) Relationship between the changes in government's tax revenue growth and the changes in demand.
- d) Relationship between the changes in government's tax revenue growth and the changes in GDP.

Solution: d)

There is a strong connection between **the government's tax revenue earnings and economic growth**. The simple fact is that as the economy achieves faster growth, the tax revenue of the government also goes up.

Tax buoyancy explains this relationship between the changes in government's tax revenue growth and the changes in GDP. It refers to the responsiveness of tax revenue growth to changes in GDP. When a tax is buoyant, its revenue increases without increasing the tax rate.

13) Which of the following taxes are not subsumed under Goods and Services Tax?

1. Anti-Dumping Duty
2. Professional Tax
3. Service Tax
4. Entertainment Tax
5. Property tax levied by local bodies

Select the correct answer code:

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

Solution: c)

Which taxes at the Centre and State level are being subsumed into GST?

At the Central level, the following taxes are being subsumed:

- a. Central Excise Duty,
- b. Additional Excise Duty,
- c. Service Tax,
- d. Additional Customs Duty commonly known as Countervailing Duty, and
- e. Special Additional Duty of Customs.

At the State level, the following taxes are being subsumed:

- a. Subsuming of State Value Added Tax/Sales Tax,
- b. Entertainment Tax (other than the tax levied by the local bodies), Central Sales Tax (levied by the Centre and collected by the States),
- c. Octroi and Entry tax,
- d. Purchase Tax,
- e. Luxury tax, and
- f. Taxes on lottery, betting and gambling.

Taxes not subsumed under GST include Basic Custom Duty, Central Excise on Petroleum Products, **Anti-Dumping Duty**, VAT on alcohol for human consumption, Stamp Duty, **Property Tax** (levied by local bodies), **Professional Tax**.

14) Consider the following statements.

1. A barrier to trade is a government-imposed restraint on the flow of international goods or services.
2. Unreasonable tax on imports is a trade barrier.
3. Capping foreign direct investment in sensitive sectors is a major example of trade barrier.

Which of the above statements is/are correct?

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

Solution: b)

A barrier to trade is a government-imposed restraint on the flow of international goods or services. The **most common barrier to trade is a tariff—a tax on imports.** Tariffs raise the price of imported goods relative to domestic goods (goods produced at home).

An import quota is a type of protectionist trade restriction that sets a physical limit on the quantity of a good that can be imported into a country in a given period of time.

FDI is related to the capital sector and overall investment policy of the nation. **FDI is not considered a trade component.**

15) An inverted duty structure for a particular product will tend to discourage its

1. Domestic value addition
2. Associated Foreign Direct Investment
3. Import of finished goods as compared to its raw material

Select the correct answer code:

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

Solution: b)

Inverted duty structure is a situation where import duty on finished goods is low compared to the import duty on raw materials that are used in the production of such finished goods.

For example, suppose the tariff (import tax) on the import of tyres is 10% and the tariff on the imports of natural rubber which is used in the production of tyres is 20%; this is a case of inverted duty structure.

When the import duty on raw materials is high, it will be more difficult to produce the concerned good domestically at a competitive price. Several industries depend on imported raw materials and components. High tax on the raw materials compels them to raise price.

The disadvantage of the inverted duty structure increases with the increased use of imported raw materials. **An inverted duty structure discourages domestic value addition.**

On the other hand, foreign finished goods will be coming at a reduced price because of low tax advantage. In conclusion, manufactured goods by the domestic industry becomes uncompetitive against imported finished goods. In such a case, even **foreign investors would not be interested** in setting up a firm for production in the country.

Statement 3: It will be just the opposite.

16) Which of the following are non-tariff measure?

1. Phytosanitary restrictions
2. Technical Barriers to Trade
3. Import licencing procedures

Select the correct answer code:

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

Solution: d)

Non-tariff measure (NTMs) are defined as policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both.

As a result, NTMs cover a broad range of policies including traditional trade policy instruments, such as quotas or price controls.

However, they also comprise technical regulatory measures that pursue important non-trade objectives that relate to health and environmental protection, such as **Sanitary and Phytosanitary (SPS) measures and Technical Barriers to Trade (TBT).**

17) The term 'Unicorn Company' often seen news means

- a) Privatisation of any loss-making state-owned company
- b) Privately held start-up company valued at over US\$1 billion
- c) A public sector company merged with another public sector company
- d) Foreign multinational company doing business in India

Solution: b)

In **business**, a **unicorn** is a privately held **startup company** valued at over US\$1 billion.

18) Which of the following is/are the measures to control the inflation?

1. Increasing the GST rates on commodities
2. Increase in government stimulus packages
3. Increasing the transfer payments

Select the correct answers code:

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

Solution: a)

Inflation is the increase in the prices of goods and services over time. Inflation is generally controlled by the Central Bank and/or the government. The main policy used is monetary policy – set by Central Banks.

Increasing in the GST rates on commodities reduce demand, leading to lower economic growth and lower inflation.

Transfer payments are the receipts which the residents of a country get for 'free', without having to provide any goods or services in return. Thus, increasing transfer payments increases spending capacity and lead to increase in demand. Thus, **it further increases inflation.**

Increase in government stimulus packages increases spending capacity and lead to increase in demand. Thus, **it further increases inflation.**

19) Consider the following statements.

1. Phillips Curve is an economic concept stating that inflation and unemployment have a stable and inverse relationship.
2. Stagflation is an economic scenario where an economy faces high inflation and low growth and high unemployment at the same time.

Which of the above statements is/are incorrect?

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

Solution: d)

Stagflation is an economic scenario where an economy faces both high inflation and low growth (and high unemployment) at the same time.

The Phillips curve states that inflation and unemployment have an inverse relationship. Higher inflation is associated with lower unemployment and vice versa.

20) Which of the following is the primary objective of monetary policy in India?

- a) Tackling stressed assets of banks
- b) Maintaining low levels of unemployment
- c) Appreciate the exchange value of rupee in the Forex markets
- d) Maintaining price stability

Solution: d)

The Reserve Bank of India (RBI) is vested with the responsibility of conducting monetary policy with the primary objective of **maintaining price stability** while keeping in mind the objective of growth.

2. Ecology and Environment

- 1) Sariska Tiger Reserve, recently seen in news is located in
- Gujarat
 - Rajasthan
 - Madhya Pradesh
 - Uttar Pradesh

Solution: b)

Sariska Tiger Reserve is located in Rajasthan.

Source

- 2) Consider the following statements.
- The ocean warming increases the frequency of tropical cyclone winds and rainfall.
 - The productivity of the Oceans increases when the carbon emission from the atmosphere are sunk by it.

Which of the above statements is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Solution: a)

Due to greenhouse gas emissions, global warming is already 1°C higher than the pre-industrial levels. There is vast evidence that this has serious consequences for ecosystems and human being. **The IPCC's special report on Oceans and Cryosphere (published in 2019) reveals that the ocean is 0.8 degrees warmer than the pre-industrial age. It is more acidic, and less productive because of the carbon emission that was sunk by the oceans.**

The **impact of ocean warming would be an increase in the frequency of tropical cyclone winds and rainfall**, as well as an **increase in extreme waves**, all of which would be accompanied by a rise in relative sea level.

- 3) Consider the following statements regarding Natural Gas.
- Natural Gas is formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years.
 - It is used as a fuel for vehicles and as a chemical feedstock in the manufacture of plastics.
 - It is associated with other hydrocarbon reservoirs in coal beds.

Which of the above statements is/are correct?

- 1, 2
- 1, 3
- 2, 3
- 1, 2, 3

Solution: d)

Natural gas is a naturally occurring hydrocarbon gas mixture consisting primarily of methane, but commonly including varying amounts of other higher alkanes, and sometimes a small percentage of carbon dioxide, nitrogen, hydrogen sulfide, or helium. It is formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over millions of years.

Natural gas is a non-renewable hydrocarbon used as a source of energy for heating, cooking, and electricity generation. It is also used as a fuel for vehicles and as a **chemical feedstock in the manufacture of plastics and other commercially important organic chemicals.**

Natural gas is found in deep underground rock formations or associated with other hydrocarbon reservoirs in coal beds and as methane clathrates.

- 4) The term “London Convention”, often seen in news, is related to
- Child labour
 - Antimicrobial Resistance
 - Marine pollution
 - Cyber crimes

Solution: c)

The London Convention: Its objective is to promote the **effective control of all sources of marine pollution** and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter.

- 5) Green Term Ahead Market (GTAM), sometimes seen in news is related to
- Biofuel import and export
 - Mining cryptocurrency using renewable energy
 - Trading in renewable energy
 - Trading of forest produce

Solution: c)

Karnataka distribution companies (discoms) have become the top seller of renewable energy under the Green Term Ahead Market (GTAM) at the Indian Energy Exchange Limited (IEX).

On 21 August 2020, **the green term-ahead market (GTAM), a power trading platform**, was launched to enable bulk electricity buyers (discoms; corporates with a contracted load of 1 MW or above) to procure renewable energy (RE) on a short-term basis from sellers (merchant RE projects or discoms having surplus RE beyond their renewable purchase obligations or RPOs).

Typically, discoms and open-access consumers procure electricity by signing long-term power purchase agreements (PPAs) for seven years or above. But, with GTAM’s launch, a new platform has emerged through from which these buyers can procure RE. In addition, it has also created opportunities for project developers to develop merchant RE capacity without getting tied down by long-term PPAs. In addition, the platform is expected to encourage RE-rich states to expand their renewable capacities beyond their RPO requirements and sell the surplus to RE-deficient states or corporate open-access consumers.

[Source](#)

- 6) Consider the following statements regarding ‘Extended producer responsibility’ (EPR).
- India first introduced EPR to manage Plastic waste and later extended to electronic-waste.
 - EPR puts the financial and/or physical onus on manufacturers for the treatment, recycling and disposal of products after a consumer has used and disposed of them.
 - The Plastic Waste Management Rules 2016 (PWMR) made importers of plastic that use plastic for packaging accountable for managing the end waste.

Which of the above statements is/are correct?

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

Solution: c)

Extended producer responsibility' (EPR) puts the financial and/or physical onus on manufacturers--meaning plastic producers, importers and brand-owners--for the treatment, recycling, reuse or disposal of products after a consumer has used and disposed of them.

India first introduced EPR to manage electronic-waste in 2012. It extended EPR to plastic manufacturers after the Plastic Waste Management Rules 2016 (PWMR) were notified in 2016. **The PWMR made producers and importers of plastic as well as brand owners that use plastic for packaging accountable for managing the end waste.**

- 7) Consider the following statements regarding International Union for Conservation of Nature (IUCN).
1. Its main aim is to mobilize the public in support of nature conservation.
 2. It was involved in establishing the World Wide Fund for Nature.
 3. It has observer and consultative status at the United Nations.

Which of the above statements is/are correct?

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

Solution: b)

The International Union for Conservation of Nature (IUCN) is an international organization working in the field of nature conservation and sustainable use of natural resources. It is involved in data gathering and analysis, research, field projects, advocacy, and education. IUCN's mission is to "influence, encourage and assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable and ecologically sustainable".

Over the past decades, IUCN has widened its focus beyond conservation ecology and now incorporates issues related to sustainable development in its projects. **IUCN does not itself aim to mobilize the public in support of nature conservation.** It tries to influence the actions of governments, business and other stakeholders by providing information and advice, and through building partnerships.

The organization is best known to the wider public for compiling and publishing the IUCN Red List of Threatened Species, which assesses the conservation status of species worldwide.

IUCN has observer and consultative status at the United Nations and plays a role in the implementation of several international conventions on nature conservation and biodiversity. It was involved in **establishing the World Wide Fund for Nature and the World Conservation Monitoring Centre.**

- 8) Consider the following statements regarding UNFCCC.
1. The UNFCCC established a framework for action to stabilise concentrations of greenhouse gases in the earth's atmosphere.
 2. Nearly all member states of the United Nations have ratified the convention.
 3. The framework sets binding limits on greenhouse gas emissions for individual countries.

Which of the above statements is/are correct?

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

Solution: b)

The UNFCCC was adopted in 1992 at the Rio Earth Summit, which marked the beginning of the international community's first concerted effort to confront the problem of climate change.

Known also as the Rio Convention, the **UNFCCC established a framework for action to stabilise concentrations of greenhouse gases in the earth's atmosphere.**

The UNFCCC entered into force in 1994, and nearly all of the world's nations—a total of 197—have ratified.

The framework sets non-binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms.

9) Consider the following statements regarding Intergovernmental Panel on Climate Change (IPCC)

1. IPCC is a joint initiative of World Meteorological Organization (WMO) and United Nations Development Programme (UNDP).
2. IPCC reports are a key input into international climate change negotiations.
3. The IPCC conducts its own research on Climate Change and provide the public scientific information on climate change.

Which of the above statements is/are correct?

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

Solution: b)

- **Created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).** IPCC reports are also a key input into international climate change negotiations.
- The IPCC is an organization of governments that are members of the United Nations or WMO. Thousands of people from all over the world contribute to the work of the IPCC. **The IPCC does not conduct its own research.**

The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations to provide the public scientific information on climate change.

10) Consider the following statements.

1. A "carbon credit" is an electronic and serialized unit that represents one ton of CO equivalent that is reduced, avoided, or sequestered from projects applying an approved carbon credit methodology.
2. Decarbonization refers to the conversion of the economic system or individual carbon emitting entity reducing the carbon intensity of its emissions over time.

Which of the above statements is/are correct?

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

Solution: b)

A "carbon credit" (also known as a "carbon offset") is an electronic and serialized unit that represents one ton of **CO2 equivalent** that is reduced, avoided, or sequestered from projects applying an approved carbon credit methodology.

Decarbonization means the reduction of carbon. More specifically, the term refers to the **conversion of the economic system or individual carbon emitting entity converting to reduce the carbon intensity of its (direct or value chain) emissions over time.**

11) Making Peace *with* Nature report, recently seen in news is released by

- a) Conservation International
- b) World Wide Fund for Nature (WWF)
- c) UN Environment

d) World Economic Forum

Solution: c)

The first UNEP synthesis report is titled: **“Making Peace With Nature: A scientific blueprint to tackle the climate, biodiversity and pollution emergencies”** and is based on evidence from global environmental assessments.

12) When coal is burned, it releases a number of airborne toxins and pollutants like

1. Mercury
2. Lead
3. Sulfur dioxide
4. Nitrogen oxides
5. Heavy Metals

Select the correct answer code:

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

Solution: d)

When coal is burned it releases a number of airborne toxins and pollutants. They include Carbon dioxide, mercury, lead, sulfur dioxide, nitrogen oxides, particulates, and various other heavy metals. Health impacts can range from asthma and breathing difficulties, to brain damage, heart problems, cancer, neurological disorders, and premature death.

13) Consider the following statements.

1. Coal releases almost similar amount of carbon dioxide relative to natural gas, on a kilogram-to-kilogram basis.
2. At the 26th session of the Conference of the Parties (COP 26) to the UNFCCC, developed countries agreed to phase out the use of coal.
3. India aims to meet 50% of its energy needs from renewable sources by 2030.

Which of the above statements is/are correct?

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

Solution: a)

Coal releases almost twice the amount of carbon dioxide relative to natural gas, on a kilogram-to-kilogram basis.

At the 26th session of the Conference of the Parties (COP 26) to the UNFCCC, countries agreed to phase down rather than phase out the use of coal.

India would have a renewable energy target of 500 GW by 2030 and meet 50% of its energy needs from renewable sources by 2030.

14) Consider the following statements regarding Khijadiya Bird Sanctuary.

1. Recently it was declared as a Ramsar site.
2. It is located in Andhra Pradesh.
3. The sanctuary is unique having both fresh water lakes, salt and freshwater marshlands.

Which of the above statements is/are correct?

- a) 1, 2

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

Solution: b)

Khijadiya Bird Sanctuary is a bird sanctuary located in Jamnagar district of **Gujarat**. About 300 species of migratory birds have been recorded here.

In 2022, on World Wetlands Day (2 February) it was **declared as a Ramsar site**.

The sanctuary is unique having **both fresh water lakes, salt and freshwater marshlands**.

- 15) While burning hydrocarbon fuels, if we see a blue flame it means that the fuel is
- a) made of unsaturated hydrocarbons
 - b) made of saturated hydrocarbons
 - c) Wet
 - d) burning completely

Solution: b)

In saturated hydrocarbons complete combustion of the fuel takes place but in the unsaturated hydrocarbons incomplete combustion takes place.

Hence **saturated hydrocarbons give a blue flame** while unsaturated hydrocarbons burn with a sooty flame.

- 16) Consider the following statements regarding Biogas.
1. It is formed by the decomposition of cow dung in the absence of oxygen.
 2. It is a non-renewable source of energy.
 3. It burns without smoke and leaves no residue.

Which of the above statements is/are correct?

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

Solution: b)

Biogas is a **renewable fuel produced by the breakdown of organic matter such as food scraps and animal waste by microorganisms in the absence of oxygen**. It **burns without smoke, leaves no residue** like ash in wood, charcoal and coal burning. Its heating capacity is high.

- 17) Which one of the following is an exhaustible but renewable natural resource?
- a) Soil
 - b) Solar energy
 - c) Nuclear energy
 - d) Water in usable condition

Solution: d)

Water in usable condition is an exhaustible but renewable natural resource.

3. Geography

- 1) The factors that cause variations in insolation are:
1. The transparency of the atmosphere
 2. The configuration of land in terms of its aspect
 3. The length of the day

Select the correct answer code:

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

Solution: d)

The energy received by the earth is known as incoming solar radiation which in short is termed as insolation. The amount and the intensity of insolation vary during a day, in a season and in a year. **The factors that cause these variations in insolation are:**

- (i) The rotation of earth on its axis
- (ii) The angle of inclination of the sun's rays
- (iii) The **length of the day**
- (iv) The **transparency of the atmosphere**
- (v) The **configuration of land in terms of its aspect**

Thus, all the given factors cause variation in the amount of insolation.

- 2) Which of the following glaciers are located in Uttarakhand?
1. Nanda Devi Glacier
 2. Nubra Glacier
 3. Zemu Glacier
 4. Bandarpunch Glacier

Select the correct answer code:

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

Solution: c)

Zemu Glacier is located in Sikkim

Nubra Glacier is located in Ladakh

- 3) Which among the following statements best describes the term 'Black Gold':
- a) Coal and its derivatives
 - b) Gold extracted from Placer deposits
 - c) Petroleum and its derivatives
 - d) Residual that remain after Gold extraction

Solution: c)

Petroleum is found between the layers of rocks and is drilled from oil fields located in off-shore and coastal areas. This is then sent to refineries which process the crude oil and produce a variety of products like diesel, petrol, kerosene, wax, plastics and lubricants. **Petroleum and its derivatives are called Black Gold as they are very valuable.**

4) Consider the following statements.

1. Tigris River flows through Turkey and Iraq.
2. Mekong River is a trans-boundary River that flows through parts of Arunachal Pradesh.

Which of the above statements is/are correct?

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

Solution: a)

The Tigris is the eastern of the two great rivers that define Mesopotamia, the other being the Euphrates. The river flows south from the mountains of south-eastern Turkey through Iraq and empties into the Persian Gulf.

The Mekong is a trans-boundary river in Southeast Asia. From the Tibetan Plateau the river runs through China's Yunnan Province, Myanmar, Laos, Thailand, Cambodia, and Vietnam.

5) Consider the following statements.

1. In India, monsoon is considered normal when rainfall falls between 96% and 104% of the Long period average (LPA).
2. El Nino is a phenomenon associated with a warming of the Central Pacific and drying up of the rains over northwest India.
3. Generally La Nina conditions does not prevail during the Monsoon period.

Which of the above statements is/are correct?

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

Solution: a)

A monsoon is considered "normal" when rainfall falls between 96% and 104% of the LPA.

El Nino, a phenomenon associated with a warming of the Central Pacific and drying up of the rains over northwest India, the coming monsoon. "Currently La Nina conditions are prevailing over equatorial Pacific. The latest forecasts indicates it will continue during the monsoon.

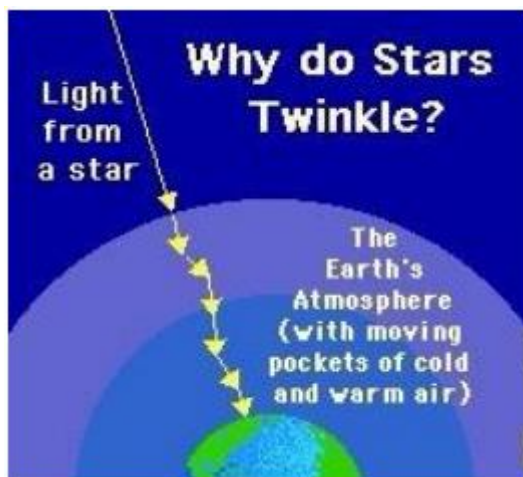
Source

6) The twinkling of a star is due to

- a) Oscillation of starlight
- b) Atmospheric reflection of starlight
- c) Atmospheric refraction of starlight
- d) Change in the position of the star

Solution: c)

The twinkling of a star is due to atmospheric refraction of starlight. The starlight, on entering the earth's atmosphere, undergoes refraction continuously before it reaches the earth.



4. Government Schemes and Programmes

1) Consider the following statements regarding Tribal Cooperative Marketing Development Federation of India (TRIFED).

1. TRIFED was established under the Multi-State Cooperative Societies Act, 1984 by the Government of India as a National level Cooperative body.
2. TRIFED is mandated to ringing about socio-economic development of tribals of the country by institutionalising the trade of Minor Forest Produce (MFP) & Surplus Agricultural Produce (SAP) collected/ cultivated by them.
3. TRIBES India is the brand under which the sourced handcrafted products from the tribal people are sold.

Which of the above statements is/are correct?

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

Solution: d)

- **TRIFED was established in August 1987 under the Multi-State Cooperative Societies Act, 1984 by the Government of India as a National level Cooperative body.**
- **TRIFED is mandated to ringing about socio-economic development of tribals of the country by institutionalising the trade of Minor Forest Produce (MFP) & Surplus Agricultural Produce (SAP) collected/ cultivated by them.**
- TRIFED plays the dual role of both a market developer and a service provider, empowering them with knowledge and tools to better their operations in a systematic, scientific manner and also assist them in developing their marketing approach.
- TRIFED is involved actively in capacity building of the tribal people through sensitization and the formation of Self-Help Groups (SHGs). TRIFED is engaged in training the tribals in several activities, so that they can effectively carry them out.
- The organisation also assists them in exploring and creating opportunities to market the developed products in national and international markets on a sustainable basis. **TRIBES India is the brand under which the sourced handcrafted products from the tribal people are sold.**

2) Consider the following statements.

1. Under Drug (Price Control) Order, National Pharmaceutical Pricing Authority (NPPA) cannot allow Pharmaceutical companies to raise the prices of essential medicines.
2. The Drugs Prices Control Order is an order issued by the Government of India under Essential Commodities Act, 1955 to regulate the prices of drugs.
3. Not all the drugs marketed in the country are under price control.

Which of the above statements is/are correct?

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

Solution: c)

The National Pharmaceutical Pricing Authority (NPPA) can use its emergency powers to allow companies to raise the price of drugs.

The pricing regulator cited shortages of the drug in India and rising costs of raw materials imported from China as reasons for increasing the ceiling price using emergency powers under Paragraph 19 of the Drug (Price Control) Order.

The Drugs Prices Control Order is an order issued by the Government of India under Sec. 3 of Essential Commodities Act, 1955 to regulate the prices of drugs.

The Order inter alia provides the list of price-controlled drugs, procedures for fixation of prices of drugs, method of implementation of prices fixed by Govt., penalties for contravention of provisions etc.

Are all the drugs marketed in the country under price control?

No. The National List of Essential Medicines (NLEM) 2011 is adopted as the primary basis for determining essentiality, which constitutes the list of scheduled medicines for the purpose of price control. The DPCO 2013 contains more than 600 scheduled drug formulations spread across 27 therapeutic groups. However, the prices of other drugs can be regulated, if warranted in public interest.

3) Consider the following statements.

1. As per Drugs (Price Control) Order, 2013 the National Pharmaceutical Pricing Authority (NPPA) is empowered to fix the ceiling price of essential medicines and medical devices.
2. The Drugs (Price Control) Order, 2013 provides for a CPI-based price change every year that pharmaceutical companies are allowed to implement.

Which of the above statements is/are correct?

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

Solution: a)

The National Pharmaceutical Pricing Authority (NPPA) has announced an annual change of 10.76% in the Wholesale Price Index (WPI), which could translate into the steepest price increases in years for over 800 scheduled drugs and medical devices in the National List of Essential Medicines (NLEM).

Every year, the authority announces the WPI change in accordance with The Drugs (Price Control) Order, 2013, or DPCO, 2013.

As per the price control order, **the NPPA is empowered to fix the ceiling price of essential medicines and medical devices** — 886 in number currently.

The order also provides for a **WPI-based price change every year that pharmaceutical companies are allowed to implement.**

As per this provision, the NPPA declares the WPI change every year.

[Source](#)

4) The medicines and devices included in the National List of Essential Medicines (NLEM) are

1. Oral rehydration salts
2. Paracetamol tablets
3. Glucose injections
4. Contraceptives
5. Multivitamin tablets

Select the correct answer code:

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

Solution: d)

Which medicines and devices are included in the NLEM?

Some of the most common drugs and medical devices, including **paracetamol tablets**, azithromycin tablets, **oral rehydration salts**, **glucose injections**, **contraceptives** like copper IUDs, condoms, insulin injections, Vitamin C tablets, and **multivitamin tablets**, are in the NLEM.

[Source](#)

5) Consider the following statements regarding Census and Socio-Economic Caste Census (SECC).

1. Census is a statutory exercise conducted under the provisions of the Census Act 1948.
2. All information collected under the Census is published in the local areas for public scrutiny.
3. All the personal information given in the Socio-Economic Caste Census (SECC) is open for use by Government departments to grant and/or restrict benefits to households.

Government departments to grant and/or restrict benefits to households.

Which of the above statements is/are correct?

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

Solution: b)

The Census is a statutory exercise conducted under the provisions of the Census Act 1948 and Rules made there under.

All information collected under the Census is confidential and will not be shared with any agency - Government or private. Certain information collected under the NPR will be published in the local areas for public scrutiny and invitation of objections.

According to the SECC website, **“all the personal information given in the Socio-Economic Caste Census (SECC) is open for use by Government departments to grant and/or restrict benefits to households”.**

6) Consider the following statements regarding National Centre for Coastal Research (NCCR).

1. The National Centre for Coastal Research (NCCR), an attached office of the Ministry of Earth Sciences (MoES) monitors the shoreline erosion in India.
2. The shoreline erosion is monitored using remote sensing data and GIS mapping techniques.

3. NCCR has prepared and published an atlas of Coastal Vulnerability Index (CVI) maps for the entire coastline of India.

Which of the above statements is/are correct?

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

Solution: a)

The National Centre for Coastal Research (NCCR), Chennai, an attached office of the Ministry of Earth Sciences (MoES) is monitoring shoreline erosion since 1990 using remote sensing data and GIS mapping techniques.

Another organisation under the MoES, **the Indian National Centre for Ocean Information Services (INCOIS), has prepared and published an atlas of Coastal Vulnerability Index (CVI) maps for the entire coastline of India** at a 1:100000 scale using data on sea level rise, coastal slope, shoreline change rate, coastal elevation, coastal geomorphology, tidal range and significant wave height.

Source

7) If the Government set-up a dedicated non-lapsable fund for Defence and Internal Security, it can receive funds to it from which of the following sources?

- 1. Consolidated Fund of India
- 2. Proceeds from the monetisation of surplus defence land
- 3. Disinvestment proceeds of *Defence Public Sector Undertakings*.

Select the correct answer code:

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

Solution: d)

To bridge the gap between projected budgetary requirements and budget allocation for defence and internal security and to provide greater predictability for enabling critical defence capital expenditure, the Commission has recommended setting up of a dedicated non-lapsable fund, the Modernisation Fund for Defence and Internal Security (MFDIS), with four specific sources: (a) **Transfers from the Consolidated Fund of India**, (b) **disinvestment proceeds of DPSEs**, (c) **proceeds from the monetisation of surplus defence land** and (d) **proceeds of receipts from defence land** likely to be transferred to state governments and for public projects in the future.

8) Consider the following statements regarding National Electric Mobility Mission Plan (NEMMP) 2020.

- 1. The National Electric Mobility Mission Plan (NEMMP) 2020 is a National Mission document providing the roadmap for the faster adoption of electric vehicles and their manufacturing in the country.
- 2. As part of NEMMP 2020, *Ministry of Road Transport & Highways* formulated Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme to promote manufacturing of electric and hybrid vehicle technology.

Which of the above statements is/are correct?

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

Solution: a)

The National Electric Mobility Mission Plan (NEMMP) 2020 is a National Mission document providing the vision and the roadmap for the faster adoption of electric vehicles and their manufacturing in the country. This plan has been designed to enhance national fuel security, to provide affordable and environmentally friendly transportation and to enable the Indian automotive industry to achieve global manufacturing leadership.

As part of the NEMMP 2020, **Department of Heavy Industry formulated a Scheme viz. Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme** to promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same.

- 9) Indian Cyber Crime Coordination Centre (I4C), sometimes seen in news works under
- Ministry of Electronics and Information Technology
 - Niti Ayog
 - Ministry of Home Affairs (MHA)
 - Minister for Science & Technology

Solution: c)

Indian Cyber Crime Coordination Centre (I4C) established under Ministry of Home affairs (MHA) to act as a nodal point at National level in the fight against cybercrime by providing a platform to deal with cybercrimes in a coordinated and comprehensive manner.

10) Consider the following statements.

- Food Corporation of India (FCI) procures food grains from farmers and then provides it to poor people through the public distribution system (PDS) at the subsidised rates.
- The FCI's subsidy costs are fully funded through the budgetary allocation.

Which of the above statements is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Solution: a)

FCI procures grains from farmers at an economic cost of almost ₹27 a kg for wheat and ₹37 for rice, and then **provides it to 80 crore poor people through the public distribution system (PDS) at the subsidised rates** of ₹2 a kg for wheat and ₹3 for rice. However, for several years, the **budgetary allocation for PDS has not been sufficient to cover FCI's subsidy costs**, forcing it to borrow from the National Small Savings Fund (NSSF) at a rate of about 8%.

11) Consider the following statements regarding National Mission on Edible Oils and Oil Palm (NMEO-OP).

- Under the scheme, oil palm farmers will be provided financial assistance and will get remuneration under a price and viability formula.
- The special emphasis of the scheme will be in India's southern states due to the conducive weather conditions in the regions.
- Along with promoting the cultivation of oil palm, this mission will also expand the cultivation of other traditional oilseed crops.

Which of the above statements is/are correct?

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

Solution: b)

- NMEO – OP will help achieve the much-desired self-reliance in palm oil.**

- It is expected to incentivise production of palm oil to reduce dependence on imports and help farmers cash in on the huge market.
- The **special emphasis of the scheme will be in India's north-eastern states and the Andaman and Nicobar Islands due to the conducive weather conditions in the regions.**
- Under the scheme, oil palm farmers will be provided **financial assistance and will get remuneration under a price and viability formula.**
- Along with promoting the cultivation of oil palm, this mission will also **expand the cultivation of our other traditional oilseed crops.**

12) Consider the following statements regarding Cyber Crime Volunteers Programme.

1. Cyber Crime Volunteers Programme aims to allow citizens to register themselves as Cyber Crime Volunteers in the role of Unlawful Content Flaggers.
2. This is the first time a state-sponsored lateral surveillance has been implemented in India.
3. The programme will help law enforcement agencies in identifying, reporting and in the removal of illegal/unlawful online content.

Which of the above statements is/are correct?

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

Solution: b)

As per the official website of the National Cyber Crime Reporting Portal, the programme will **help law enforcement agencies in identifying, reporting and in the removal of illegal/unlawful online content.**

This form of surveillance, which enables citizens to “watch over” one another is called lateral surveillance.

This is not the first time state-sponsored lateral surveillance has been implemented in India. For example, the C-Plan App in Uttar Pradesh launched for keeping a tab on anti-social elements, is designed to receive inputs from certain identified individuals in villages across the State.

5. Science and Technology

1) Consider the following statements regarding Zoonotic Diseases.

1. Zoonotic diseases have impacted humankind since the beginning of its association with animals.
2. Increased incidences of zoonotic diseases in recent times are a direct consequence of Large-scale deforestation and encroachment of pristine natural ecosystems.
3. Out of all the human disease-causing pathogens identified so far, only around 10% are of animal origin.

Which of the above statements is/are correct?

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

Solution: b)

Zoonotic diseases, impact humankind since the beginning of its association with animals. They are also the most numerous ones. **Out of all the human disease-causing pathogens identified so far, over 60% are of animal**

origin. These include the causative agents for several well-known human and livestock diseases such as Tuberculosis, Brucellosis, Anthrax, Leptospirosis, and Rabies.

Though the natural genetic changes that make these pathogens more infectious and lethal are outside our control, several field observations and scientific investigations have established that the **increased incidences of zoonotic diseases in recent times are a direct consequence of the ongoing abuse of nature.**

Our irresponsible actions such as large scale deforestation and encroachment of pristine natural ecosystems; reckless land-use changes either to enhance agriculture and livestock productions, or to provide land for infrastructure and industrial developments; and unsustainable consumption, coupled with unregulated trade of wildlife and their derivatives, often via a long and unhygienic supply chain, provide the enabling conditions for such disease spillovers.

2) Consider the following statements.

1. Antibiotics are under the purview of the Central Drugs Standard and Control Organization (CDSCO) under the Ministry of Health and Family Welfare (MoHFW).
2. According to Drugs and Cosmetics (D&C) Act, 1940, it is mandatory that Antibiotics are sold only under prescription.

Which of the above statements is/are incorrect?

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

Solution: d)

Antibiotics are under the purview of the Central Drugs Standard and Control Organization (CDSCO) under the Ministry of Health and Family Welfare (MoHFW). In the Drugs and Cosmetics (D&C) Act, 1940, antibiotics are typically placed under Schedule H which makes it mandatory that they be sold only under prescription.

3) Supercomputing play an important role in which of the following fields?

1. Quantum mechanics
2. Flood prediction
3. Genomics
4. Oil and gas exploration
5. Drug discovery

Select the correct answer code:

- a) 1, 2, 3, 4
- 2) 2, 3, 4, 5
- c) 1, 2, 3, 4, 5
- d) 1, 3, 4, 5

Solution: c)

Supercomputers are used for a wide range of computationally intensive tasks in various fields, including **quantum mechanics, weather forecasting, flood prediction, climate research, oil and gas exploration, genomics and drug discovery.**

4) Consider the following statements regarding Avian influenza or Bird flu.

1. Avian influenza is a highly contagious viral disease caused by Influenza Type A viruses.
2. It can be spread through their droppings while flying.
3. It does not affect the egg production in poultry birds.

Which of the above statements is/are correct?

- a) 1 only
- b) 1, 2

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

Solution: b)

What is avian influenza or bird flu?

It is a **highly contagious viral disease caused by Influenza Type A viruses** which generally affects poultry birds such as chickens and turkeys. There are many strains of the virus – some of them are mild and may merely cause a **low egg production** or other mild symptoms among chickens, while others are severe and lethal.

How does the bird flu spread?

Wild aquatic birds such as ducks and geese are the natural reservoir of Influenza A viruses and the central players in the ecology of these viruses.

Many birds carry the flu without developing sickness, and shed it in their droppings. Since birds excrete even while flying, they provide “a nice aerosol of influenza virus, shedding it all over the world”

5) Consider the following statements regarding Trans-fats.

1. Trans-fats are industrially produced and are not naturally present.
2. Repeated use of oil at high temperature can increase the trans-fat content.
3. If trans-fat is to be replaced with healthier substitutes, one must compromise on food taste and cost.

Which of the above statements is/are correct?

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

Solution: b)

While **trans fat is naturally present in red meat and dairy products**, the focus is on restricting the industrially produced trans fat used solely to prolong the shelf life of products at less cost.

Even when the fat/oil contains less than 2% trans fat, **repeated use at high temperature can increase the trans fat content.**

It is now well known that **trans fat can be completely eliminated and replaced with healthier substitutes without any change in the food taste or cost.**

6) Consider the following statements regarding Thalassemia.

1. Thalassemia is an inherited blood disorder characterised by less oxygen-carrying protein (haemoglobin) and fewer red blood cells in the body than normal.
2. Blood stem cell transplant is the long-term course of treatment for Thalassemia.
2. Iron supplements have to be given for those undergoing frequent blood transfusions as it leads to iron deficiency.

Which of the above statements is/are correct?

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

Solution: b)

Thalassemia is an inherited blood disorder characterised by less oxygen-carrying protein (haemoglobin) and fewer red blood cells in the body than normal.

Doctors have advised that a blood stem cell transplant would be the best long-term course of treatment.

Those with thalassemia have to undergo regular blood transfusions. Additionally, they have to be on regular iron chelation therapy to remove the excess iron from the body. The excess iron that accumulates in the body owing to frequent blood transfusions can affect vital organs leading to complications.

While stem cell transplant is the best option, finding a matching donor and affordability are the major challenges. Only 25% of persons with thalassemia have a donor in the family.

While over 10,000 children are being diagnosed with thalassemia each year, only 0.04% of the Indian population is registered as potential blood stem cell donors.

Source

7) Consider the following statements.

1. A short circuit is an electrical circuit that allows a current to travel along an unintended path instead of following the circuit.
2. At the time of Short-circuit, the current in the circuit reduces substantially.

Which of the above statements is/are correct?

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

Solution: a)

A short circuit is an abnormal condition in an electrical circuit where the electrical current flows through an unintended, shorter pathway instead of following the circuit. This results in an **excessive current flowing through the circuit**. The opposite of a short circuit is an "open circuit", which is an infinite resistance between two nodes.

8) Consider the following statements.

1. An electric generator works on the principle of electromagnetic induction.
2. An electric motor converts electrical energy into mechanical energy.
3. A wire with a green insulation is usually the live wire of an electric supply.

Which of the above statements is/are correct?

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

Solution: a)

An Electric generator is a device which is used to produce electric energy, which can be stored in batteries or can be directly supplied to the homes, shops, offices, etc. **Electric generators work on the principle of electromagnetic induction.**

Electromagnetic induction is the process of production of electricity when magnetic field changes.

An electric motor converts electrical energy into mechanical energy.

The wire with a green insulation is not usually the live wire of the electric supply. The green colour wire is actually responsible for grounding purpose.

9) To study which one of the following was a spacecraft launched that would be farthest from the Sun and that would run exclusively on solar power?

- a) Mars' Atmosphere

- b) Venus's moons
- c) Kuiper belt
- d) Jupiter's Trojan asteroids

Solution: d)

'Lucy' Mission:

- This is **NASA's first mission to explore the Jupiter Trojan asteroids.**

When Lucy is making its flybys, **it will break the record for the farthest from the sun a spacecraft has run exclusively on solar power.**

- 10) Methanoic acid is normally found in
- a) Human Blood
 - b) Human Brain
 - c) Muscles
 - d) Ant Stings

Solution: d)

Formic acid, systematically named methanoic acid, is the simplest carboxylic acid. It is an important intermediate in chemical synthesis and occurs naturally, most notably in some **ants**.

- 11) Which of the following are the applications of gene-editing technology?
1. It can boost disease resistance in humans & increase life span.
 2. It can be used to protect endangered species or bring to life extinct species.
 3. It can slow down the spread of diseases by eliminating its means of transmission.

Select the correct answer code:

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

Solution: d)

Potential applications of gene-editing technology

- Human genome editing can be used to treat many human diseases & genetic disorders like HIV/AIDS, haemophilia etc.
- It could substantially **bolster disease resistance in humans & increase life span.**
- It could form the basis of highly efficient & cost-effective next generation antibiotics (based on bacteriophage viruses).
- Gene editing can be used to **protect endangered species or bring to life extinct species.** It can be used to grow healthier food (via fortification) and increasing harvest.
- It has the potential to **slow down the spread of diseases by eliminating its means of transmission.** E.g. Gene editing can be used to introduce sterile mosquitoes into the environment.

- 12) Consider the following statements regarding Cell Membrane.
1. The cell membrane, also called the plasma membrane, is found in all cells and separates the interior of the cell from the outside environment.
 2. The cell membrane consists of a lipid bilayer that is semipermeable.
 3. It does not allow diffusion of gases like oxygen and carbon dioxide.

Which of the above statements is/are correct?

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

d) 1, 2, 3

Solution: a)

The cell membrane, also called the plasma membrane, is found in all cells and separates the interior of the cell from the outside environment. The cell membrane consists of a lipid bilayer that is semipermeable. The cell membrane regulates the transport of materials entering and exiting the cell.

Some substances (small molecules, ions) such as carbon dioxide (CO₂) and oxygen (O₂), can move across the plasma membrane by diffusion, which is a passive transport process.

13) The genome mapping in the ocean will help to

1. Understand the internal working of the ecosystem of the Indian Ocean.
2. Understand the adaptation of microbes to various micronutrients like nitrates, sulphates and silicates in the ocean.
3. Identify the factors controlling the changes in RNA and DNA of microbes in the oceans.

Select the correct answer code:

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

Solution: d)

What will the scientists learn from the genome mapping in the ocean?

This will help scientists understand the internal working of the ecosystem of the Indian Ocean. The research will enable scientists to **identify the factors controlling the changes in RNA, DNA in the oceans**, and various stressors impacting them. **The ocean has several micronutrients like nitrates, sulphates and silicates**, minerals like iron ore and zinc, and trace metals like cadmium or copper. The genome mapping will show the presence of which these microbes have adapted to, in addition to their reaction to atmospheric carbon dioxide. This will help in identifying which part of the ocean has a greater concentration of which mineral or element.

Exploring the ocean genome will enable an increase in the growing number of commercial biotechnology applications, extending from multiple anticancer treatments to cosmetics and industrial enzymes, to antiviral molecules... Exploration of the ocean at a genetic level will result in new insights into taxonomy and adaptive capacity that can help optimize conservation efforts

14) Consider the following statements regarding Rickets.

1. Rickets is a condition that results in weak or soft bones in children.
2. The most common cause of rickets is a vitamin C deficiency.
3. It is classified as neglected tropical disease.

Which of the above statements is/are correct?

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

Solution: a)

Rickets is a condition that results in weak or soft bones in children. Complications may include bone fractures, muscle spasms, or an abnormally curved spine. **The most common cause of rickets is a vitamin D deficiency.** This can result from eating a diet without enough vitamin D.

15) Consider the following statements regarding Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV).

1. PSLV was developed to launch low-Earth Orbit satellites into polar and sun synchronous orbits.
2. GSLV was developed to launch the heavier INSAT class of geosynchronous satellites into orbit.
3. GSLV is designed mainly to deliver remote sensing satellites, whereas PSLV has been designed for launching communication satellites.

launched communication satellites.

Which of the above statements is/are correct?

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

Solution: a)

Differences between PSLV and GSLV:

- India has two operational launchers- Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV).
- PSLV is the third generation launch vehicle of India and the first Indian launch vehicle which is equipped with liquid stages.
- GSLV, on the other hand, is the fourth generation launch vehicle and is a three-stage vehicle with four liquid strap-ons.
- **PSLV was developed to launch low-Earth Orbit satellites into polar and sun synchronous orbits.** It has since proved its versatility by launching geosynchronous, lunar and interplanetary spacecraft successfully.
- On the other hand, **GSLV was developed to launch the heavier INSAT class of geosynchronous satellites into orbit.** In its third and final stage, GSLV uses the indigenously developed cryogenic upper stage.
- **PSLV is designed mainly to deliver the earth observation or remote sensing satellites, whereas, GSLV has been designed for launching communication satellites.**
- GSLV delivers satellites into a higher elliptical orbit, Geosynchronous Transfer Orbit (GTO) and Geosynchronous Earth Orbit (GEO).
- PSLV can carry satellites up to a total weight of 2000 kgs into space and reach up to an altitude of 600-900 km. GSLV can carry weight up to 5000 kgs and reach up to 36,000 km.

16) Which of the following living organisms gives litmus?

- a) Algae
- b) Protozoa
- c) Lichen
- d) Virus

Solution: c)

Litmus is a water-soluble mixture of different dyes extracted from **lichens**. It is often absorbed onto filter paper to produce one of the oldest forms of pH indicator, used to test materials for acidity.

17) Head on Generation (HOG) technology, recently seen in news is related to

- a) Lithium-Ion Batteries
- b) Railways
- c) Artificial Intelligence
- d) Internet of Things

Solution: b)

Head on Generation (HOG)—is being adopted by the Indian Railways, power supply is tapped from overhead power lines and distributed to train coaches.

What is Head on Generation (HOG) technology?

The system runs the train's 'hotel load' (the load of air conditioning, lights, fans, and pantry, etc.) by drawing electricity from the overhead electric lines through the pantograph.

18) Yeast, which is used to make bread, belongs to the group

- a) Protozoa
- b) Bacteria
- c) Protista
- d) Fungi

Solution: d)

Yeasts are eukaryotic, single-celled microorganisms classified as members of the fungus kingdom.

19) Consider the following pairs of vaccine and category:

- 1. Covishield : mRNA Vaccine
- 2. Covaxin : Inactivated Vaccine
- 3. Sputnik V : Viral vector based vaccine

Which of the above pairs is/are correctly matched?

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

Solution: c)

Covaxin is an inactivated vaccine. This destroys the pathogen's ability to replicate, but keeps it intact so that the immune system can still recognise it and produce an immune response.

Covishield is based on the viral-vectored platform. Sputnik V is also based on the viral-vectored platform.

20) Consider the following statements regarding NISAR mission.

- 1. NISAR is a satellite wholly developed by ISRO, that will detect movements of the earth's surface.
- 2. It will help track changes in croplands, hazard sites and to monitor crises such as volcanic eruptions.
- 3. It uses synthetic aperture radar that produces high-resolution images.

Which of the above statements is/are correct?

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

Solution: c)

NASA and ISRO are collaborating on developing a satellite called NISAR, which will detect movements of the planet's surface as small as 0.4 inches over areas about half the size of a tennis court.

The satellite is planned to launch in 2023 into a near-polar orbit and will scan the globe every 12 days over the course of its three-year mission of imaging the Earth's land, ice sheets and sea ice to give an "unprecedented" view of the planet.

The name NISAR is short for **NASA-ISRO-SAR.** SAR here refers to the **synthetic aperture radar** that NASA will use to measure changes in the surface of the Earth. Essentially, SAR refers to a technique for producing high-resolution images. Because of the precision, the radar can penetrate clouds and darkness, which means that it can collect data day and night in any weather.

During the course of three years, the images will allow scientists to **track changes in croplands, hazard sites and will help them to monitor crises such as volcanic eruptions**. The images will be detailed enough to show local changes and broad enough to measure regional trends.

21) Consider the following statements.

1. Among all human pathogens, bacteria tend to become most resistant to antibiotics because of their physiology.
2. Bacteria have larger number of genes compared to multicellular organisms.
2. Bacteria does not exchange resistant genes during sexual reproduction.

Which of the above statements is/are correct?

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

Solution: a)

Among all human pathogens, bacteria tend to become most resistant to antibiotics because of their physiology. Since they are unicellular, bacteria have smaller number of genes compared to multicellular organisms. Therefore, even the slightest of changes in their genetic system resulting from exposure to antibiotics alters their pathogenic characteristic.

Moreover, since they reproduce rapidly, an entirely new 'type' of antibiotic-resistant bacteria species can evolve from one mutated individual in a very short time. **Bacteria also exchange resistant genes during sexual reproduction.** This happened in the case of *Neisseria gonorrhoeae* bacterium becoming resistant to penicillin.

6. International Relations and Organisations

- 1) Istanbul Convention, sometimes seen in news is related to
 - a) Criminalising acts of financing of terrorism
 - b) Protection of Ozone layer
 - c) Protecting Cultural and natural heritage
 - d) Preventing Violence Against Women

Solution: d)

The Council of Europe established the **Istanbul Convention, a human rights treaty, with the aim to prevent and prosecute all forms of violence against women**, promote gender equality and ensure protection and rehabilitation of women who are victims of violence.

- 2) Consider the following statements regarding Asia/Pacific Group on Money Laundering (APG).
 1. The Asia/Pacific Group on Money Laundering (APG) is a NATO style regional inter-governmental body.
 2. The members are committed to implement international standards against money laundering (AML) and financing the proliferation of weapons of mass destruction.
 Which of the above statements is/are incorrect?

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

d) Neither 1 nor 2

Solution: a)

The **Asia/Pacific Group on Money Laundering (APG)** is a **FATF style regional inter-governmental (international) body**, the members of which are committed to implement **international standards against money laundering (AML), the financing of terrorism (CTF) and financing the proliferation of weapons of mass destruction.**

- APG was **founded in 1997 in Bangkok, Thailand**, and currently consists of 41 member jurisdictions in the Asia-Pacific region and a number of observer jurisdictions and international/regional observer organisations.
- Jurisdictions that join the APG, either as members or as observers, commit to the **Recommendations of the Financial Action Task Force (FATF).**

3) Abraham Accords, recently seen in news is a joint statement between

1. Israel
2. Saudi Arabia
3. Bahrain
4. United Arab Emirates

Select the correct answer code:

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

Solution: b)

'Abraham Accords' entered with the **UAE and Bahrain** are 'peace-for-peace' deals without any physical quid pro quo by **Israel**.

4) Consider the following statements regarding Financial Action Task Force (FATF).

1. Once a country is blacklisted, FATF urges all member countries to put economic sanctions on the blacklisted country.
2. Gulf Cooperation council is a full member of Financial Action Task Force (FATF).

Which of the above statements is/are correct?

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

Solution: b)

FATF maintains two different lists of countries: those that have deficiencies in their Anti-Money Laundering and Counter-Terrorism Financing (AML/CTF) regimes, but they commit to an action plan to address these loopholes, and those that do not end up doing enough. The former is commonly known as grey list and latter as blacklist. **Once a country is blacklisted, FATF calls on other countries to apply enhanced due diligence and counter measures, increasing the cost of doing business with the country and in some cases severing it altogether.**

Although the Gulf Cooperation Council (GCC) is a full Member of the FATF, the individual Member countries of the GCC (of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates) are not.

5) Consider the following statements regarding the roles and functions of Financial Action Task Force (FATF).

1. FATF set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering and terrorist financing.
2. FATF does not involve in monitoring countries' progress in implementing its Recommendations.

Which of the above statements is/are incorrect?

- a) 1 only

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

Solution: b)

The Financial Action Task Force (FATF) was established in July 1989 by a Group of Seven (G-7) Summit in Paris.

The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for **combating money laundering, terrorist financing and other related threats to the integrity of the international financial system**. Starting with its own members, the **FATF monitors countries' progress in implementing the FATF Recommendations**; reviews money laundering and terrorist financing techniques and counter-measures; and, promotes the adoption and implementation of the FATF Recommendations globally.

In April 2012, it added efforts to counter the financing of proliferation of weapons of mass destruction.

- 6) Consider the following statements regarding Permanent Court of Arbitration (PCA).
1. Permanent Court of Arbitration (PCA) is an intergovernmental organization that resolve disputes that arise out of international agreements between member states, international organizations or private parties.
 2. Permanent Court of Arbitration (PCA) is an official United Nations Observer.
 3. Human Rights Issues are the exclusive domain of United Nations Commission on Human Rights, therefore PCA does not involve in Human Rights issues.

Which of the above statements is/are correct?

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

Solution: a)

The Permanent Court of Arbitration (PCA) is an intergovernmental organization located in The Hague, Netherlands. It is not a court in the traditional sense, but provides services of arbitral tribunal to **resolve disputes that arise out of international agreements between member states, international organizations or private parties**.

The cases span a range of legal issues involving territorial and maritime boundaries, sovereignty, **human rights**, international investment, and international and regional trade.

The organization is not a United Nations agency, but the PCA is an **official United Nations Observer**.

- 7) Consider the following statements regarding International Maritime Organisation (IMO).
1. International Maritime Organisation's (IMO) is the United Nations' specialised agency responsible for the safety and security of shipping.
 2. IMO sets standard for environmental performance of international shipping.
 3. India is not listed in the IMO's list of states with "largest interest in international seaborne trade".

Which of the above statements is/are correct?

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

Solution: b)

The IMO is the United Nations' specialised agency responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.

The IMO's policies or conventions have a serious impact on every aspect of shipping including the cost of maritime trade.

The IMO, like any other UN agency, is primarily a secretariat, which facilitates decision-making processes on all maritime matters through meetings of member states. The binding instruments are brought in through the conventions — to which member states sign on to for compliance — as well as amendments to the same and related codes.

The IMO currently lists India as among the 10 states with the "largest interest in international seaborne trade".

8) Consider the following statements regarding International Atomic Energy Agency (IAEA).

1. IAEA is active in championing civil nuclear solution to a number of areas like health, which is one of the main areas of peaceful application of nuclear know how.
2. IAEA is also active in dealing with climate change, pandemic containment and in prevention of Zoonotic diseases.

Which of the above statements is/are correct?

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

Solution: c)

Apart from dealing with the sovereign states and their pursuit of civil and military nuclear programmes, the **IAEA is also active in championing civil nuclear solution to a number of areas like health, which is one of the main areas of peaceful application of nuclear know how.** That apart, in recent years, the IAEA is also active in **dealing with climate change, pandemic containment and in prevention of Zoonotic diseases.**

9) Eastern Economic Forum, sometimes seen in news is the initiative of

- a) Japan
- b) China
- c) Russia
- d) United States of America

Solution: c)

Eastern Economic Forum is an international forum held each year in Vladivostok, Russia, for the purpose of encouraging foreign investment in the Russian Far East.

10) Consider the following statements regarding United Nations Human Rights Council.

1. United Nations Human Rights Council was established by the UN General Assembly to replace the UN Commission on Human Rights.
2. Its members are elected for three-year terms on a regional group basis.
3. It addresses human rights issues such as freedom of association and assembly, freedom of expression, LGBT rights, and the rights of racial and ethnic minorities.

Which of the above statements is/are correct?

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

Solution: d)

- **The United Nations Human Rights Council is a United Nations body whose mission is to promote and protect human rights around the world.**
- **The UNHRC has 47 members elected for staggered three-year terms on a regional group basis.** The headquarters of UNHRC is in Geneva, Switzerland.
- The UNHRC investigates allegations of breaches of human rights in UN member states, and addresses important thematic human rights issues such as freedom of association and assembly, freedom of expression, freedom of belief and religion, women's rights, LGBT rights, and the rights of racial and ethnic minorities.
- **The UNHRC was established by the UN General Assembly on March 15, 2006 to replace the UN Commission on Human Rights (UNCHR, herein CHR)** that had been strongly criticised for allowing countries with poor human rights records to be members.

11) Which of the following countries has announced to achieve the goal of fewer than 5% of the population smoking daily by 2025?

- China
- South Korea
- New Zealand
- Germany

Solution: c)

New Zealand plans to ban young people from ever buying cigarettes in their lifetime in one of the world's toughest crackdowns on the tobacco industry.

The New Zealand government said while existing measures like plain packaging and levies on sales had slowed tobacco consumption, the tougher steps were necessary to achieve its **goal of fewer than 5% of the population smoking daily by 2025.**

Source

12) Consider the following statements.

- 'Maitri Diwas' will be celebrated to commemorate India recognising Bangladesh.
- India accorded recognition to Bangladesh after the liberation of Bangladesh in 1971.

Which of the above statements is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Solution: a)

'Maitri Diwas' will be commemorated on December 6 to mark India recognising Bangladesh in 1971.

Ten days before the liberation of Bangladesh, India had recognised Bangladesh on December 6, 1971. India was one of the first countries to establish bilateral diplomatic ties with Bangladesh.

13) The recently formed 'Middle Eastern Quad' consists of which of the following countries

- India
- Israel
- USA
- Saudi Arabia
- Egypt

Select the correct answer code:

- 1, 2, 3, 4
- 1, 3, 4, 5

- c) 1, 2, 3
- d) 2, 3, 4, 5

Solution: c)

The new Middle Eastern Quad (comprising **India, Israel**, the UAE and the **US**).

14) Consider the following statements regarding North Atlantic Treaty Organization (NATO).

1. NATO was formed with the signing of the Washington Treaty.
2. NATO membership is open to any country that is willing to accept the terms of the military alliance.
3. All decisions are taken by consensus in NATO.

Which of the above statements is/are correct?

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

Solution: c)

NATO membership is open to “any other European state in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area.”

A “NATO decision” is the expression of the collective will of all 30 member countries since all decisions are taken by consensus.

NATO is committed to the peaceful resolution of disputes. If diplomatic efforts fail, it has the military capacity needed to undertake crisis-management operations. These are carried out under the **Washington Treaty - NATO’s founding treaty** - or under a UN mandate, alone or in cooperation with other countries and international organizations.

15) Operation Searchlight is related to

- a) Bangladesh Liberation War
- b) Sino-Indian War
- c) First Kashmir War
- d) Sri Lankan Civil War

Solution: a)

Bangladesh Liberation War began after the Pakistani military junta based in West Pakistan launched **Operation Searchlight** against the people of East Pakistan on the night of 25 March 1971.

16) Consider the following statements regarding United Nations Convention on the Law of the Sea (UNCLOS).

1. UNCLOS is a UN specialised agency that defines the rights and responsibilities of nations with respect to their use of the world's oceans and the management of marine natural resources.
2. International Seabed Authority (ISA) and International Tribunal for the Law of the Sea (ITLOS) were established by the UNCLOS.
3. International Seabed Authority (ISA) regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction.

Which of the above statements is/are correct?

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

Solution: c)

The United Nations Convention on the Law of the Sea (UNCLOS) defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources.

International Seabed Authority (ISA) was established to organize, regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction (referred to as "the Area"), an area underlying most of the world's oceans. It is an organization established by the United Nations Convention on the Law of the Sea.

The International Tribunal for the Law of the Sea (ITLOS) is an intergovernmental organization created by the mandate of the Third United Nations Conference on the Law of the Sea. It was established by the United Nations Convention on the Law of the Sea.

7. Polity

- 1) Consider the following statements regarding President's rule that is imposed under Article 356 of the Constitution.
1. Every proclamation of President's rule must be approved by both the houses of Parliament within a stipulated time.
 2. It cannot be imposed without the written recommendation of the Governor of the concerned state.

Which of the above statements is/are incorrect?

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

Solution: b)

Article 356 empowers the President to issue a proclamation, if he is satisfied that a situation has arisen in which the government of a state cannot be carried on in accordance with the provisions of the Constitution.

Notably, **the president can act either on a report of the governor of the state or otherwise too (ie, even without the governor's report).**

A proclamation imposing President's Rule must be approved by both the Houses of Parliament within two months from the date of its issue. If approved by both the Houses of Parliament, the President's Rule continues for six months.

- 2) Consider the following statements.
1. According to the Constitution of India, The Governor shall from time to time summon each House of the Legislature of the State to meet at such time and place as he thinks fit.
 2. The Constitution also puts on the Governor the responsibility of ensuring that the House is summoned at least once every six months.
 3. The Governor always has to act on the aid and advice of the cabinet and cannot decide on his or her own on summoning the House.

Which of the above statements is/are correct?

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

Solution: a)

“The Governor shall from time to time summon the House or each House of the Legislature of the State to meet at such time and place as he thinks fit...” says Article 174 of the Constitution. The provision also puts on the Governor the responsibility of ensuring that the House is summoned at least once every six months.

Although it is the Governor’s prerogative to summon the House, according to Article 163, the Governor is required to act on the “aid and advice” of the Cabinet. So when the Governor summons the House under Article 174, this is not of his or her own will but on the aid and advice of the Cabinet.

There are a **few instances where the Governor can summon the House despite the refusal of the Chief Minister who heads the Cabinet.** When the Chief Minister appears to have lost the majority and the legislative members of the House propose a no-confidence motion against the Chief Minister, then the Governor can decide on his or her own on summoning the House.

But the actions of the Governor, when using his discretionary powers can be challenged in court.

3) Consider the following statements regarding Attorney General (AG) of India.

1. The Attorney General (AG) of India is the highest law officer in the country and is a part of the Union Executive.

2. He/she appears on behalf of the Government of India in all cases in the Supreme Court or in any case in any High Court in which the Government of India is concerned.

3. Term of office of AG is fixed by constitution for 5 years.

Which of the above statements is/are correct?

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

Solution: a)

Attorney General of India:

The Attorney General (AG) of India is a **part of the Union Executive**. AG is the **highest law officer in the country**. Article 76 of the Constitution provides for the office of AG of India.

Appointment and Eligibility:

- **AG is appointed by the President on the advice of the government.**
- **S/he must be a person who is qualified to be appointed a judge of the Supreme Court, i.e. s/he must be a citizen of India and must have been a judge of some high court for five years or an advocate of some high court for ten years or an eminent jurist, in the opinion of the President.**
- **Term of the Office: Not fixed by the Constitution.**
- **Removal:** Procedures and grounds for the removal of AG are not stated in the Constitution. S/he holds office during the pleasure of the President (may be removed by the President at any time).

Duties and Functions:

- To give advice to the Government of India (GoI) upon such legal matters, which are referred to her/him by the President.
- To perform such other duties of a legal character that are assigned to her/him by the President.
- **To appear on behalf of the GoI in all cases in the Supreme Court or in any case in any High Court in which the GoI is concerned.**
- To represent the GoI in any reference made by the President to the Supreme Court under Article 143 (Power of the President to consult the Supreme Court) of the Constitution.

- 4) Consider the following statements regarding Systematic Voters' Education and Electoral Participation program (SVEEP).
1. SVEEP is the initiative of *Ministry of Information and Broadcasting*.
 2. It helps in making an informed decision during the elections and in turn build a truly participative democracy in India.
 3. The programme is designed according to the socio-economic, cultural and demographic profile of the state.

Which of the above statements is/are correct?

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

Solution: b)

Systematic Voters' Education and Electoral Participation program, better known as SVEEP, is the flagship program of the Election Commission of India for voter education, spreading voter awareness and promoting voter literacy in India.

SVEEP's primary goal is to **build a truly participative democracy in India by encouraging all eligible citizens to vote and make an informed decision during the elections**. The programme is based on multiple general as well as targeted interventions which are designed according to the socio-economic, cultural and demographic profile of the state as well as the history of electoral participation in previous rounds of elections and learning thereof.

- 5) Consider the following statements regarding Anti-defection provisions.
1. The presiding officer of the House is empowered to make rules to give effect to the provisions of the Tenth Schedule.
 2. The presiding officer of the House can take up a defection case suo-moto and not necessarily when he/she receives a complaint from a member of the House.

Which of the above statements is/are correct?

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

Solution: a)

Any question regarding disqualification arising out of defection is to be decided by presiding officer of the house.

The presiding officer of a House is also empowered to make rules to give effect to the provisions of the Tenth Schedule.

All such rules must be placed before the House for thirty days. The House may approve or modify or disapprove them.

Further, he may direct that any wilful contravention by any member of such rules may be dealt with in the same manner as a breach of privilege of the House.

According to the rules made so, **the presiding officer can take up a defection case only when he receives a complaint from a member of the House.**

Before taking the final decision, he must give the member (against whom the complaint has been made) a chance to submit his explanation. He may also refer the matter to the committee of privileges for inquiry. Hence, defection has no immediate and automatic effect.

- 6) According to Article 112 of the Indian Constitution, the Union Budget of a year is referred to as the Annual Financial Statement (AFS). Arrange the following stages of the Budget in the chronological order.
1. Presentation of Budget.
 2. Scrutiny by Departmental Committees.

3. General discussion.
4. Voting on Demands for Grants.
5. Passing of Appropriation Bill and Finance Bill

Select the correct answer code:

- a) 1-2-3-5-4
- b) 1-2-3-4-5
- c) 1-3-2-5-4
- d) 1-3-2-4-5

Solution: d)

According to Article 112 of the Indian Constitution, the Union Budget of a year is referred to as the Annual Financial Statement (AFS).

In Parliament, the Budget goes through six stages:

- Presentation of Budget.
- General discussion.
- Scrutiny by Departmental Committees.
- Voting on Demands for Grants.
- Passing of Appropriation Bill.
- Passing of Finance Bill.

7) Consider the following statements regarding Privilege motion.

1. It can be moved in both Lok Sabha and Rajya Sabha.
2. Any notice should be relating to an incident of recent occurrence.
3. The Speaker is the first level of scrutiny of a privilege motion.

Which of the above statements is/are correct?

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

Solution: d)

Parliamentary privileges are certain rights and **immunities enjoyed by members of Parliament**, individually and collectively, so that they can “effectively discharge their functions”. When any of these rights and immunities are disregarded, the offence is called a breach of privilege and is punishable under law of Parliament.

- A notice is moved in the form of a motion by any member of either House against those being held guilty of breach of privilege.
- A member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or of a committee thereof. The rules however mandate that any notice should be relating to an **incident of recent occurrence** and should need the intervention of the House.
- The **Speaker/RS chairperson is the first level of scrutiny of a privilege motion**. The Speaker/Chair can decide on the privilege motion himself or herself or refer it to the privileges committee of Parliament.

8) Consider the following statements.

1. A.K. Gopalan Case : This case dealt with the amendability of Fundamental Rights
2. Shankari Prasad Case : This case was related to the validity of the Preventive Detention Act
3. Maneka Gandhi case : This case was related to Right to Personal Liberty

Which of the above pairs is/are correctly matched?

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

Solution: b)

A.K. Gopalan Case (1950): Supreme Court contended that there was no violation of Fundamental Rights enshrined in Articles 13, 19, 21 and 22 under the provisions of the **Preventive Detention Act**, if the detention was as per the procedure established by law. Here, the SC took a narrow view of Article 21.

Shankari Prasad Case (1951): This case dealt with the **amendability of Fundamental Rights** (the First Amendment's validity was challenged). The SC contended that the Parliament's power to amend under Article 368 also includes the power to amend the Fundamental Rights guaranteed in Part III of the Constitution.

Maneka Gandhi case (1978): A main issue in this case was whether the right to go abroad is a part of the **Right to Personal Liberty** under Article 21. The SC held that it is included in the Right to Personal Liberty. The SC also ruled that the mere existence of an enabling law was not enough to restrain personal liberty. Such a law must also be "just, fair and reasonable."

9) Consider the following statements.

1. No member of the Parliament can oppose the introduction of a bill in the Parliament, but can oppose it by voting against it when the bill is put to vote.
2. The Government bills does not automatically go to Parliamentary committees for examination.

Which of the above statements is/are correct?

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

Solution: b)

Any member of the Parliament can oppose the introduction of a bill by stating that it initiates legislation outside the legislative competence of the Parliament. There is limited debate, and the house in which the bill is getting introduced does not delve into constitutional niceties. MPs also get an opportunity to discuss a bill's constitutionality while debating it in the Lok Sabha and Rajya Sabha

The real opportunity for probing a bill's constitutionality arises when a parliamentary committee is examining it.

The committee process also has the advantage of drawing on constitutional expertise outside of the law ministry.

But our parliamentary committee process has a fatal flaw. **Government bills do not automatically go to committees for examination.** Ministers get an option to refer their bill to a select committee. They often don't exercise this option and request the presiding officers to not send the bill to a ministry specific departmentally related committee.

10) The government introduced amendments to which of the following laws to introduce electoral bonds?

1. Representation of the People Act of 1951
2. Companies Act of 2013
3. Income Tax Act of 1961

Select the correct answer code:

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

Solution: d)

Using the money bill route to bypass the Rajya Sabha, the government introduced regressive amendments to laws, including the **Income Tax Act of 1961, the Companies Act of 2013, and the Representation of the People Act of 1951, to introduce electoral bonds.**

11) Consider the following statements about National Commission for Women (NCW).

1. It has all the powers of a civil court.
2. It can attend to cases of harassment of women and order appropriate punishments.
3. It can review the Constitutional and Legal safeguards for women.

Which of the above statements is/are correct?

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

Solution: a)

The National Commission for Women was set up as statutory body in January 1992 under the National Commission for Women Act, 1990 to :

- review the Constitutional and Legal safeguards for women;
- recommend remedial legislative measures;
- facilitate redressal of grievances **and advise the Government on all policy matters affecting women.**

The **commission** also **has** the **powers** that are vested upon with a **civil court**.

14) Which of the following rights is/are declared by Supreme Court as a part of Article 21?

1. Right against solitary confinement
2. Right of women to be treated with decency and dignity
3. Right to information.
4. Right to marry

Select the correct answer code:

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

Solution: d)

The Supreme Court has reaffirmed its judgement in the *Menaka* case in the subsequent cases. It has declared the following rights as part of Article 21:

- (a) Right to live with human dignity.
- (b) Right to decent environment including pollution free water and air and protection against hazardous industries.
- (c) Right to livelihood.
- (d) Right to privacy.
- (e) Right to shelter.
- (f) Right to health.
- (g) Right to free education up to 14 years of age.
- (h) Right to free legal aid.
- (i) Right against solitary confinement.
- (j) Right to speedy trial.
- (k) Right against handcuffing.
- (l) Right against inhuman treatment.
- (m) Right against delayed execution.
- (n) Right to travel abroad.
- (o) Right against bonded labour.
- (p) Right against custodial harassment.
- (q) Right to emergency medical aid.
- (r) Right to timely medical treatment in government hospital.

- (s) Right not to be driven out of a state.
- (t) Right to fair trial.
- (u) Right of prisoner to have necessities of life.
- (v) Right of women to be treated with decency and dignity.
- (w) Right against public hanging.
- (x) Right to hearing.
- (y) Right to information.
- (z) Right to reputation
- (ab) Right to marry

15) Which of the following are the benefits of Citizens' Charter?

1. Improves the quality of services
2. Value for the taxpayers' money
3. Creates Accountability on Individuals and Organisations providing services.
4. Specify what to expect and how to act if standards are not met

Select the correct answer code:

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

Solution: d)

The basic principles of citizens' charter movement and its importance

It was first articulated and implemented in the UK in 1991 as a national programme. The basic objective of the Citizens' Charter is to empower the citizen in relation to public service delivery. Six principles of the Citizens' Charter movement as originally framed, were: (i) Quality: Improving the quality of services; (ii) Choice: Wherever possible; (iii) Standards: Specify what to expect and how to act if standards are not met; (iv) Value: For the taxpayers' money; (v) Accountability: Individuals and Organisations; and (vi) Transparency: Rules/ Procedures/ Schemes/Grievances.

"Citizens' Charters" initiative is a response to the quest for solving the problems which a citizen encounters while dealing with the organisations providing public services. The concept of Citizens' Charter enshrines the trust between the service provider and its users.

16) The Part-IV of the constitution of India mentions which of the following as the duty of every citizen of India?

1. To renounce practices derogatory to the dignity of women.
2. To value and preserve a unitary national culture
3. To develop the spirit of inquiry and reform

Select the correct answer code:

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

Solution: c)

It shall be the duty of every citizen:

- To abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem.
- To cherish and follow the noble ideals which inspired our national struggle for freedom.
- To uphold and protect the sovereignty, unity, and integrity of India.
- To defend the country and render national service when called upon to do so.

- To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to **renounce practices derogatory to the dignity of women**.
- To value and preserve the rich heritage of our composite culture.
- To protect and improve the natural environment including forests, lakes, rivers, wildlife and to have compassion for living creatures.
- To **develop the scientific temper, humanism and the spirit of inquiry and reform**.
- To safeguard public property and to abjure violence.
- To strive towards excellence in all spheres of individual and collective activity, so that the nation constantly rises to higher levels of endeavor and achievement.
- Who is a parent or guardian, to provide opportunities for education to his child, or as the case may be, ward between the age of six to fourteen years.

17) Consider the following statements regarding State Election Commission.

1. The state election commissioner is appointed by the President.
2. His conditions of service and tenure of office are determined by the State Legislature.
3. He can be removed from the office only in the manner and grounds prescribed for the removal of a judge of the state high court.

Which of the above statements is/are correct?

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

Solution: b)

State election commissioner is appointed by the Governor, and his/her terms of service are also determined by the Governor.

While he is appointed by the Governor, he **can be removed only by the President**, and not the Governor. It is not a subordinate body to the Election Commission of India. It has a separate constitutional existence.

The tenure and appointment will be directed as per the law made by the state legislature. However, State Election Commissioner shall not be removed from his/her office except in like manner and on the like grounds as a Judge of a High Court.

18) Consider the following statements.

1. In *Indra Sawhney vs Union of India*, the Supreme Court held that reservations under Article 16(4) could only be provided at the time of entry into government service but not in matters of promotion.
2. In *Nagaraj case* the Supreme court said that the State is bound to make reservation for the SCs and STs in promotions.

Which of the above statements is/are incorrect?

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

Solution: b)

Indra Sawhney vs Union of India and M Nagaraj case:

• In its landmark 1992 decision in *Indra Sawhney vs Union of India*, the Supreme Court had held that reservations under Article 16(4) could only be provided at the time of entry into government service but not in matters of promotion.

- It added that the principle would operate only prospectively and not affect promotions already made and that reservation already provided in promotions shall continue in operation for a period of five years from the date of the judgment. It also ruled that the creamy layer can be and must be excluded.
- On June 17, 1995, Parliament, acting in its constituent capacity, adopted the seventy-seventh amendment by which clause (4A) was inserted into Article 16 to enable reservation to be made in promotion for SCs and STs. The validity of the seventy-seventh and eighty-fifth amendments to the Constitution and of the legislation enacted in pursuance of those amendments was challenged before the Supreme Court in the **Nagaraj case**.
- Upholding the validity of Article 16 (4A), the court then said that it is an enabling provision. **“The State is not bound to make reservation for the SCs and STs in promotions.** But, if it seeks to do so, it must collect quantifiable data on three facets — the backwardness of the class; the inadequacy of the representation of that class in public employment; and the general efficiency of service as mandated by Article 335 would not be affected”.

8. History, Art and Culture

1) Consider the following statements.

1. The Bamiyan valley, in the Hindu Kush mountains was a key node of the early Silk Routes.
2. The Bamiyan Buddha statue that dated back to the 5th century AD was a confluence of Gupta, Sassanian and Hellenistic artistic styles.
3. The remains of the Bamiyan Buddhas was the first site in Afghanistan to be inscribed in the UNESCO list of world heritage sites.

Which of the above statements is/are correct?

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

Solution: a)

The Bamiyan valley, in the Hindu Kush mountains and along the river Bamiyan, was a key node of the early Silk Routes, emerging as a hub of both commercial and cultural exchange.

According to UNESCO, the “rise of Bamiyan was closely connected with spread of Buddhism across Central Asia. The Bamiyan Buddha statues, hewn from sandstone cliffs, are said to have **dated back to the 5th century AD**, and were once the tallest standing Buddhas in the world. In their Roman draperies and with two different mudras, the statues were great examples of a **confluence of Gupta, Sassanian and Hellenistic artistic styles**.

Called Salsal and Shamama by the locals, they rose to heights of 55 and 38 metres respectively. Salsal means “light shines through the universe”, while Shamama is “Queen Mother”.

In 2003, UNESCO included the remains of the Bamiyan Buddhas in its list of world heritage sites. The first site in Afghanistan to be inscribed was the Minaret and Archaeological Remains of Jam, which was inscribed in the 26th session of the World Heritage Committee in 2002.

[Source](#)

2) Consider the following statements regarding Gandhara style of art.

1. The Gandhara school drew upon the anthropomorphic traditions of Roman religion and dressed Buddha in garments resembling those seen on Roman imperial statues.
2. This style of art was closely associated with Hinayana Buddhism.
3. Bamiyan Buddha statues is an example of the Gandhara style of art.

Which of the above statements is/are correct?

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

Solution: b)

Gandhara art:

- The **Gandhara school drew upon the anthropomorphic traditions of Roman religion** and represented the Buddha with a youthful Apollo-like face, **dressed in garments resembling those seen on Roman imperial statues.**
- This style of art was **closely associated with Mahayana Buddhism** and hence the main theme of this art was Lord Buddha and Bodhisattvas.
- The Buddha and Bodhisattva figures resemble the Greek God Apollo with broad shoulders, a halo around the head. The physical features such as muscles, nails, hair have been done with great detail.
- All early Bodhisattvas are shown in wearing turbans, jewelry, and muslin skirts, a costume that was an adaptation of the actual dress of Kushan and Indian nobles.
- Thus, it can be conjectured that in idea and conception this style was Indian and in execution it was foreign. **One example of the Gandhara style of art is the Bamiyan Buddha statues.**

- 3) What is common to the places called Idukki, Parambikulam and Aliyar
- a) Pre-historic cave painting
 - b) Buddhist archaeological sites
 - c) Underground cave system
 - d) Water reservoirs

Solution: d)

Parambikulam Dam is an embankment dam on the Parambikulam River. The **Idukki Dam** is a double curvature Arch dam constructed across the Periyar River. **Aliyar Reservoir** is a reservoir located in Aliyar village in Tamil Nadu.

- 4) The headquarters of Ghadar Movement/party were at
- a) Florida
 - b) Canada
 - c) San Francisco
 - d) Stanford University

Solution: c)

The **Ghadar Party** was headquartered at San Francisco, USA. It was founded in 1913 by Sohan Singh Bhakna.

- 5) Which of the following terms were used in Indo-Persian sources of the Mughal period to denote a peasant?
1. Raiyat
 2. Muzarian
 3. Asami

Select the correct answer code:

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

Solution: d)

The term which Indo-Persian sources of the Mughal period most frequently used to denote a peasant was **raiya** (plural, riaya) or **muzarian**. In addition, we also encounter the terms kisan or **asami**.

- 6) Jaapi, Xorai and Gamosa are primarily associated with which state?
- Manipur
 - Nagaland
 - Assam
 - Mizoram

Solution: c)

Decorative jaapis (field hats), hand-woven gamosas and bell-metal xorais - important symbols of Assamese identity and culture are abundantly seen in political campaigns across the state.

The jaapi is a conical hat made of bamboo and covered with dried tokou leaves.

The Gamosa, which literally translates to a cloth to wipe one's body. Used at home as a towel or in public functions to felicitate dignitaries or celebrities.

Xorai: Made of bell-metal, the xorai essentially a tray with a stand at the bottom, with or without a cover can be found in every Assamese household.

9. States

- 1) Consider the following statements regarding Lakshadweep.
- Lakshadweep is a uni-district Union Territory.
 - In recent years, in Lakshadweep the largest component of Electricity generation is through Solar Energy.
 - The Total Forest Cover in Lakshadweep is around 90% of its geographical area.
- Which of the above statements is/are correct?
- 1, 2
 - 1 only
 - 1, 3
 - 1, 2, 3

Solution: c)

Lakshadweep is a uni-district Union Territory.

Lakshadweep is unique. It is an egalitarian coconut tree owning society, with little economic inequality, a very high level of both literacy and unemployment. The Muslim community is designated as Scheduled Tribes. The land area is fully covered with coconut trees, the main agricultural crop, and fisheries is the main economic activity employing a quarter of the working population. **Electricity generation is mainly through diesel generators and is expensive and solar electricity has limitations as it requires a large land area.**

The **Forest Cover** in the UT is 27.10 sq km which is **90.33% of the UT's geographical area.**

- 2) Which of the following states/Union Territories has the highest percentage of forest area to the total geographical area?
- Mizoram
 - Arunachal Pradesh

- c) Lakshadweep
- d) Madhya Pradesh

Solution: c)

The Union Territory of **Lakshadweep** has the highest forest cover of 90.33% . Among states, Mizoram has the highest forest cover of 85.41%.

10. Defence and Security

- 1) Consider the following statements regarding Unlawful Activities (Prevention) Act.
1. Under the UAPA act, only individuals can be designated as terrorist and not organizations.
 2. Under this act, both Indian and foreign nationals can be charged.

Which of the above statements is/are correct?

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

Solution: b)

Unlawful Activities (Prevention) Act:

- UAPA was passed in **1967**. It **aims at effective prevention of unlawful activities associations in India**.
- **Unlawful activity** refers to any action taken by an individual or association intended to disrupt the **territorial integrity and sovereignty of India**.
- The Act assigns absolute power to the central government, by way of which if the **Centre deems an activity as unlawful** then it may, **by way of an Official Gazette, declare it so**.
- It has **death penalty and life imprisonment** as highest punishments.
- Under UAPA, **both Indian and foreign nationals** can be charged. It will be applicable to the offenders in the same manner, even if crime is committed on a foreign land, outside India.
- **In August 2019, the Central government had amended the Unlawful Activities (Prevention) Act, 1967 to include the provision of designating an individual as a terrorist Prior to this amendment, only organizations could be designated as terrorist organizations**

- 2) Unlawful content is the one that violates any law in force in India. Such content
1. Is against defence of India
 2. Is against friendly relations with foreign States
 3. Disturbing Public Order
 4. Child Sex Abuse material

Select the correct answer code:

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

Solution: d)

What is unlawful content

In general, content that violates any law in force in India. Such content may fall under following broad categories:

- i. Against sovereignty and integrity of India
- ii. Against defence of India

- iii. Against Security of the State
- iv. Against friendly relations with foreign States
- v. Content aimed at disturbing Public Order
- vi. Disturbing communal harmony
- vii. Child Sex Abuse material

- 3) The Ministry of Home Affairs (MHA) can designate individuals as “terrorists” under which of the following provisions
- a) Prevention of Terrorism Act, 2002
 - b) National Security Act, 1980
 - c) The Unlawful Activities (Prevention) Amendment Act, 2019
 - d) None of the above

Solution: c)

The Ministry of Home Affairs (MHA) can designate individuals as “terrorists” under the amended anti-terror law that was passed by the Parliament in 2019.

The **Unlawful Activities Prevention Act (UAPA)**, enacted in 1967, was first amended in 2004, 2008 and 2013.

The UAPA as amended in August 2019 gave the MHA the power to designate individuals as terrorists.

- 4) Consider the following statements regarding Cognitive hacking with reference to Cyber Attack.
1. Cognitive hacking is a form of social engineering that seeks to manipulate the perception of people by exploiting their psychological vulnerabilities.
 2. The purpose of the attack is to bring changes in the behaviour of the people, usually resulting from disinformation and computational propaganda.
- Which of the above statements is/are correct?
- a) 1 only
 - b) 2 only
 - c) Both 1 and 2
 - d) Neither 1 nor 2

Solution: c)

Cognitive hacking is a cyberattack that seeks to manipulate the perception of people by exploiting their psychological vulnerabilities. The purpose of the attack is changes in behavior, usually resulting from exposure to misinformation. As such, cognitive hacking is a form of social engineering although it may target a broad audience rather than specific individuals.

The implications of cognitive hacking are more devastating than cyberattacks on critical infrastructure. The damage wrought by disinformation is challenging to repair. Revolutions throughout history have used cognitive hacking techniques to a significant effect to overthrow governments and change society. It is a key tactic to achieve major goals with limited means.

- 5) The Border Security Force (BSF) has powers pertaining to which of the following crimes?
1. Prevention of trans–border crimes
 2. Illegal entry of foreigners
 3. Seizure of narcotics
 4. Cattle smuggling

Select the correct answer code:

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

Solution: d)

These powers pertain to specific crimes such as **seizure of narcotics, cattle smuggling, prevention of trans-border crimes, illegal entry of foreigners** among others.

Source

- 6) Consider the following statements regarding Border Security Force (BSF).
1. The BSF works under the administrative control of the Ministry of Defence.
 2. The BSF can carry out operations upto 50 km from the international boundary in the Indian states.
 3. In India, BSF carries out operations in the states of Gujarat, Punjab, Rajasthan, West Bengal and Assam.

Which of the above statements is/are correct?

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

Solution: c)

The **BSF works under the administrative control of the Ministry of Home Affairs (MHA).**

Earlier, the BSF's limit was fixed up to 80 km from the International Boundary in Gujarat and 15 km in **Rajasthan, Punjab, West Bengal and Assam**. On October 11 last, the MHA, through a notification in the Gazette of India, enhanced the "arrest, search and seize" **powers of the BSF up to 50 km from the International Boundary in Punjab, West Bengal and Assam**.

The force was earlier also carrying out operations in border areas but it was limited to 2 to 5 km.

Source

- 7) Cyber-attacks can be carried out in a number of ways. These include:
1. Computer-network attacks
 2. Social-networking-led attacks
 3. Attacks on radio networks and wireless networks
 4. Supply-chain attacks
 5. High power Radio frequencies that disrupt all unprotected electronics in a given geographical area

Select the correct answer code:

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

Solution: d)

Cyber-attacks can be carried out in a number of ways. Among them:

- Computer-network attacks
- Supply-chain attacks
- Social-networking-led attacks
- Attacks on radio networks for GPS and wireless networks
- Radio frequencies with sufficiently high power to disrupt all unprotected electronics in a given geographical area

- 8) Consider the following statements regarding cyber security.
1. Trojan horses are used to create back-doors so that a hacker can have access to the secure network.
 2. Unlike viruses, computer worms are malicious programs that copy themselves from system to system, rather than infiltrating legitimate files.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Solution: c)

Malware is defined as a software designed to perform an unwanted illegal act via the computer network. It could be also defined as **software with malicious intent**.

Malware can be classified based on how they get executed, how they spread, and/or what they do. Some of them are discussed below.

1. **Virus:** A program that can infect other programs by modifying them to include a possible evolved copy of itself.
2. **Worms:** Disseminated through computer networks, **unlike viruses, computer worms are malicious programs that copy themselves from system to system, rather than infiltrating legitimate files.**
3. **Trojans:** Trojan or **trojan horse** is a program that generally impairs the security of a system. Trojans are used to **create back-doors (a program that allows outside access into a secure network) on computers belonging to a secure network so that a hacker can have access to the secure network.**
4. **Hoax:** An e-mail that warns the user of a certain system that is harming the computer. The message thereafter instructs the user to run a procedure (most often in the form of a download) to correct the harming system. When this program is run, it invades the system and deletes an important file.
5. **Spyware:** Invades a computer and, as its name implies, monitors a user's activities without consent. Spywares are usually forwarded through unsuspecting e-mails with bonafide e-mail i.ds. Spyware continues to infect millions of computers globally.

11. Reports and Indices

- 1) State of the Global Climate Report is being released by
 - a) United Nations Environment Programme (UNEP)
 - b) Intergovernmental Panel on Climate Change (IPCC)
 - c) World Meteorological Organisation (WMO)
 - d) German watch

Solution: c)

The World Meteorological Organisation is publishing the report since 1993. The report mainly documents indicators of climate system such as increasing land and ocean temperatures, greenhouse gas concentrations, melting ice, sea-level increase, glacier retreat and extreme weather.

The report also highlights the impacts of climate change on socio-economic development, food security, migration and marine ecosystems.

- 2) Consider the following statements.
 1. Climate Change Performance Index (CCPI) tracks countries' efforts to combat climate change and is published by UNEP.
 2. UNFCCC can impose penalty if a country fails to meet Nationally Determined Contributions (NDCs) under the Paris Climate Pact.

Which of the above statements is/are incorrect?

- a) 1 only

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

Solution: c)

Published annually since 2005, the Climate Change Performance Index (CCPI) tracks countries' efforts to combat climate change. As an independent monitoring tool it aims to enhance transparency in international climate politics and enables comparison of climate protection efforts and progress made by individual countries. Germanwatch, the NewClimate Institute and the Climate Action Network publish the index annually.

If a country fails to meet its NDCs, there is no penalty.

- 3) Consider the following statements regarding Agricultural Markets and Farmer Friendly Reforms Index (AMFFRI).
1. Agricultural Markets and Farmer Friendly Reforms Index evaluates Indian states on the extent to which each of them undertook required agri-reforms.
 2. A high AMFFRI rank implies the state is undertaking desired reforms.
 3. AMFFRI is the initiative of the Department of Agriculture, Co-operation and Farmers Welfare.

Which of the above statements is/are correct?

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

Solution: a)

NITI Aayog's Agricultural Markets and Farmer Friendly Reforms Index — AMFFRI, an index that evaluates Indian states on the extent to which each of them undertook required agri-reforms; a low AMFFRI rank implies the state is undertaking desired reforms. It was found that states that undertook reforms, and were thus ranked low on AMFFRI, witnessed a relatively faster agri-GDP growth rate and states which did not undertake required reforms, and thus were ranked high on the AMFFRI, witnessed relatively lower agri-GDP growth rates.

12. Maps / Places

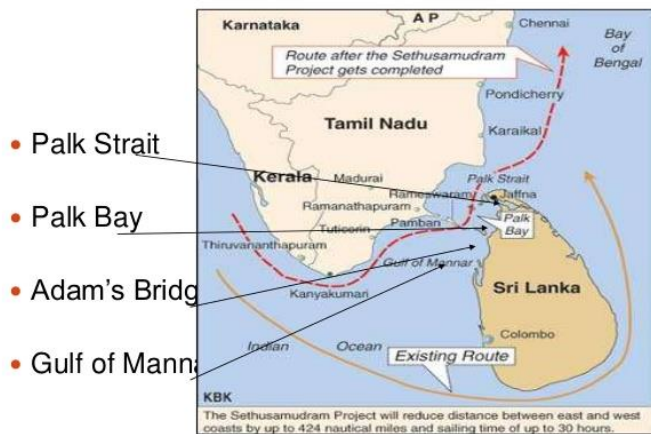
- 1) Arrange the following locations from south to north.
1. Palk Bay
 2. Palk Strait
 3. Gulf of Mannar
 4. Adam's Bridge

Select the correct answer code:

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

Solution: b)

GEOGRAPHICAL LOCATION



2) Consider the following statements:

1. Sea of Japan separates Japan and China.
2. Yellow sea separates China and Korean Peninsula.

Which of the above statements is/are incorrect?

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

Solution: a)

The Sea of Japan is a marginal sea between the Japanese archipelago, Sakhalin, the Korean Peninsula and Russia.

The *Yellow Sea* is a marginal sea of the Western Pacific Ocean located between mainland China and the Korean Peninsula.

3) The Mekong is a trans-boundary river in Southeast Asia. It passes through which of these countries?

1. Laos
2. China
3. India
4. Myanmar

Select the correct answer code:

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

Solution: c)

From the Tibetan Plateau the river runs through **China's** Yunnan Province, **Myanmar**, **Laos**, Thailand, Cambodia, and Vietnam.