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1. Economy

1) Consider the following statements regarding the Importance of Fiscal Policy in India.

1. Fiscal policy plays a key role in elevating the rate of capital formation both in the public and private sectors.

2. Fiscal policy aims to minimise the imbalance in the dispersal of income and wealth.

3. Fiscal policy helps in providing stimulus to elevate the savings rate.

Which of the above statements is/are correct?

a) 1, 2

b) 1, 3

c) 2, 3

d) 1, 2, 3

Solution: d)

Importance of Fiscal Policy in India:

- In a country like India, **fiscal policy plays a key role in elevating the rate of capital formation both in the public and private sectors.**
- Through taxation, the fiscal policy helps mobilise considerable amount of resources for financing its numerous projects.
- Fiscal policy also helps in **providing stimulus to elevate the savings rate.**
- The fiscal policy gives adequate incentives to the private sector to expand its activities.
- Fiscal policy aims to **minimise the imbalance in the dispersal of income and wealth.**

2) Consider the following statements.

1. Primary deficit implies that the government is unable to contain recurring expenditure such as subsidies and other discretionary expenditures within the limits of recurring non-debt revenue.

2. Increasing primary deficit will lead to higher revenue deficit and unsustainable debt servicing in future.

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)

Primary deficit is the revenue deficit net of interest payments and the implication is that the **government is unable to contain recurring expenditure such as subsidies and other discretionary expenditures within the limits of recurring non-debt revenue.** So, the primary deficit ratio is the leading indicator for the revenue deficit ratio to follow and **increasing primary deficit is the surest route to higher revenue deficit and unsustainable debt servicing in future.**

3) Consider the following statements regarding Credit-deposit ratio.

1. Credit-deposit ratio of a bank is an indicator of how much a bank lends out of its deposits or how much of its core funds are used for lending.

2. RBI stipulates that all the Scheduled Commercial Banks must maintain the Credit-deposit ratio above 70%.

3. Declining Credit-deposit ratio, primarily indicates the inability of the banks to mobilise bank deposits.

Which of the above statements is/are correct?

a) 1, 2

b) 1 only

c) 1, 3

d) 1, 2, 3

Solution: b)

Credit-deposit ratio shows how much a bank lends out of its deposits or how much of its core funds are used for lending. A high credit-deposit ratio suggests an overstretched balance sheet, and may also hint at capital adequacy issues.

RBI does not stipulate a minimum or maximum level for the ratio.

What is Credit-Deposit ratio for banks?

Jul 07, 11:07

The CD ratio refers to the credit-deposit ratio in banking parlance. It tells us how much of the money banks have raised in the form of deposits has been deployed as loans. So if the CD ratio for a single bank or the whole banking system stands at 75%, it means that three-fourths of the deposits with that bank or with the system has been given out as loans. A low CD ratio suggests relatively poor credit growth compared with deposit growth. A high CD ratio would mean strong demand for credit in an environment of relatively slower deposit growth. The CD ratio had slipped to historic lows of under 70% in late 2016, when demonetisation kept bankers busy exchanging banknotes and few new loans were given.

4) Consider the following statements.

1. As a percentage of GDP, combined capital expenditure of states is higher than that of the Centre.
2. Increase in Government borrowing is credit positive for the private sector, as it stabilises the interest rate structure in the market.

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 spending of 27 State governments and union territories (UTs) shows that **capital expenditure of several States witnessed a strong growth** in the second quarter of the current fiscal.

In the aftermath of the pandemic, the **Centre has been constantly nudging State governments to spend more on capital expenditure**, which has a high multiplier effect, ability to crowd-in private investments, increase employment opportunities and spur overall economic growth.

Increase in Government borrowing is credit negative for the private sector. Increase in government borrowing from banks decreases private sector credit.

[Source](#)

5) Consider the following statements regarding Infrastructure investment trusts (InvITs).

1. InvITs are pooled investment vehicles which enable direct investment of capital from investors in primarily operational infrastructure projects.
2. Foreign portfolio investors (FPIs) can also invest in InvIT debt securities.
3. The Pension Fund Regulatory and Development Authority (PFRDA) allows private sector NPS subscribers to invest in units issued by InvITs.

Which of the above statements is/are correct?

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

Solution: d)

InvITs are pooled investment vehicles which enable direct investment of capital from investors in primarily operational infrastructure projects.

Earlier this year, the Insurance Regulatory and Development Authority of India (IRDAI) allowed domestic insurers to invest in debt securities and subscribe to units of listed InvITs.

The Reserve Bank of India in November 2021 amended foreign exchange regulations allowing **foreign portfolio investors (FPIs) to invest in InvIT debt securities**. Further EPFO, which manages the biggest pension corpus in the country, recently approved investing up to 5 per cent of the annual deposits in alternative investment funds (AIFs) including InvITs. This is in addition to the already established rules by the **Pension Fund Regulatory and Development Authority (PFRDA) which allow private sector (tier 1) NPS subscribers to invest in units issued by InvITs**.

[Source](#)

6) Consider the following statements regarding Variable Rate Reverse Repo (VRRR) auction.

1. Reserve Bank of India (RBI) conducts Variable Rate Reverse Repo (VRRR) auction to absorb liquidity in the economy.
2. It is usually conducted for a shorter period, say less than 3 days.

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 Reserve Bank of India (RBI) has increased the amount of variable rate reverse repo (VRRR) auctions in December, as it is shifting out of the fixed-rate overnight reverse repo auction and re-establishing VRRR as the main **liquidity management operations**.

The operations of **14-day VRRR** would continue to be complemented by longer-term VRRRs, the size and maturities of which will be decided based on continuous assessment.

[Source](#)

7) Consider the following statements regarding Goods and Services Tax (GST).

1. GST is designed on the principle of destination-based consumption taxation, with seamless provision for input tax credit.
2. GST Council is the key decision-making body, chaired by the Union Finance Minister with a Minister of State in charge of Finance and the Finance Ministers of States as members.
3. GST is applicable to all goods and services except specified petroleum products.

Which of the above statements is/are correct?

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

Solution: b)

India's GST architecture is built on the firm foundations of a GST Council and the GST Network (GSTN). The first is the **key decision-making body, chaired by the Union Finance Minister with a Minister of State in charge of Finance and the Finance Ministers of States as members.**

GSTN generates high frequency data and subjects them to analytics for informed policy making.

Designed on the principle of destination-based consumption taxation, with seamless provision for input tax credit.

GST is applicable to all goods and services **except alcohol for human consumption and five specified petroleum products with a common threshold exemption applicable to both CGST and SGST.**

Source

8) Consider the following taxes levied under Goods and Services Tax (GST).

1. CGST levied by the Centre.
2. SGST levied by the States.
3. UTGST levied by the Union Territories.
4. IGST levied on inter-State supply including imports.

Which of the above statements is/are correct?

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

Solution: d)

CGST levied by the Centre, SGST by the States, UTGST by the Union Territories, and IGST levied on inter-State supply including imports, GST is applicable to all goods and services except alcohol for human consumption and five specified petroleum products with a common threshold exemption applicable to both CGST and SGST.

Source

9) Consider the following statements.

1. RBI announces its monetary policy including key policy rates quarterly.
2. RBI follows the accommodative monetary policy to revive and sustain growth in the economy.
3. RBI has kept the policy rates unchanged in the last two years.

Which of the above statements is/are correct?

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

Solution: b)

The Reserve Bank of India (RBI) has announced its **bi-monthly monetary policy**. The Monetary Policy Committee (MPC) of the Reserve Bank of India **kept key policy rates unchanged for the ninth time** in a row and decided to "continue with the **accommodative stance as long as necessary to revive and sustain growth** on a durable basis and continue to mitigate the impact of COVID-19 on the economy, while ensuring that inflation remains within the target going forward".

The bank has kept the repo rate — the rate at which the RBI lends funds to banks — unchanged at four per cent and the reverse repo rate — the rate at which RBI borrows from banks — at 3.35 per cent. The bank rate — the rate at which RBI lends short-term funds to banks sans security — also remains unchanged at 4.25 per cent.

[Source](#)

10) Consider the following statements regarding India's gold imports.

1. India is the largest importer of gold in the world.
2. Majority of the gold demand is due to RBI's requirements.

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)

India is the largest importer of gold, which mainly caters to the demand of the jewellery industry. In volume terms, the country imports 800-900 tonnes of gold annually.

[Source](#)

11) Consider the following statements.

1. At present India is among the top five largest importing nations in the world.
2. At present India's share in global GDP is around 10 percent.

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: d)

With a growing middle class and its rising discretionary spending, India will become the world's third largest importer by 2050 with a share of 5.9% of global imports, right behind China and the US, a new report said.

At present, India is ranked eighth among largest importing nations with a 2.8% import share and is set to become the fourth largest importer by 2030.

At present, **India is ranked fifth in size of world's economies with a share of 3.3% in global GDP.**

[Source](#)

12) Consider the following statements regarding Hedge Funds.

1. Hedge funds are included in the category of Alternative Investment Fund (AIF).
2. These funds are not regulated by SEBI.

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)

Hedge funds are included under **Category III Alternative Investment Fund (AIFs)**. These are regulated by SEBI.

13) Consider the following statements regarding RBI's co-lending model.

1. It is the revised version of RBI's co-origination of loans scheme.

2. Under the RBI's co-lending model, banks are permitted to co-lend with all registered NBFCs based on a prior agreement.

3. NBFCs are required to retain a minimum of 50 percent share of individual loans on their books.

Which of the above statements is/are correct?

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

Solution: b)

In November 2020 the Reserve Bank of India (RBI) decided to **permit banks to “co-lend with all registered NBFCs (including HFCs) based on a prior agreement”**.

In September 2018, the RBI had announced “co-origination of loans” by banks and Non-Banking Financial Companies (NBFCs) for lending to the priority sector. “The arrangement entailed joint contribution of credit at the facility level by both the lenders as also sharing of risks and rewards.

The primary focus of the **revised scheme, rechristened as ‘Co-Lending Model’ (CLM)**, was to “improve the flow of credit to the unserved and underserved sector of the economy and make available funds to the ultimate beneficiary at an affordable cost.

Under the CLM, **NBFCs are required to retain at least a 20 per cent share of individual loans on their books**. This means 80 per cent of the risk will be with the banks — who will take the big hit in case of a default.

[Source](#)

14) Consider the following statements regarding Credit / Debit Card tokenisation.

1. Tokenisation is a process in which the customer would need to manually key in their card details each time they complete an online purchase.

2. Tokenisation would allow online purchases to go through without exposing card details, in a bid to improve data security.

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)

Tokenisation is a process by which card details are replaced by a unique code or token, generated by an algorithm, allowing **online purchases to go through without exposing card details, in a bid to improve data security**.

The RBI has ordered all companies in India to purge saved credit and debit card data from their systems from Jan. 1, 2022.

Opting out of tokenisation would mean a customer would need to manually key in their card details each time they completed an online purchase.

[Source](#)

15) Consider the following statements.

1. National Statistical Office (NSO) releases the gross value added (GVA) and gross domestic product (GDP) numbers every quarter.

2. Gross Value Added (GVA) measures economic activity from the supply side by looking at the value added by different sectors of the economy.

3. Gross fixed capital formation (GFCF) shows how much of the new value added in the economy is invested rather than consumed.

Which of the above statements is/are correct?

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

Solution: d)

The National Statistical Office (NSO) releases the quarter gross value added (GVA) and gross domestic product (GDP) numbers.

India's Gross Domestic Product (GDP) —measures economic activity from the demand side by looking at the expenditures made by different sections of the society. **India's Gross Value Added (GVA) —measures economic activity from the supply side by looking at the value added by different sectors of the economy.**

Gross fixed capital formation (GFCF) is a component of the expenditure on gross domestic product (GDP), and thus **shows something about how much of the new value added in the economy is invested rather than consumed.**

Source Source

16) Consider the following statements.

1. The Department of Economic Affairs details the inflation situation in the country in its "Monthly Economic Review".
2. Major part of the year 2021 witnessed the wholesale price inflation of more than 10 percent.
3. The RBI which has the mandate to maintain stable prices in the country, targets wholesale inflation instead of retail inflation.

Which of the above statements is/are correct?

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

Solution: a)

When the Office of the Economic Adviser in the Department for Promotion of Industry and Internal Trade (DPIIT) released the data last week, it declared that the **wholesale inflation rate had zoomed** to 14.23% in November. In other words, wholesale prices in November this year were 14.23% higher than wholesale prices in November last year.

November is the 8th straight month when wholesale inflation has grown by double digits.

Department of Economic Affairs within the Finance Ministry detailed the inflation situation in the country in its "Monthly Economic Review".

The RBI, which is India's central bank charged with the mandate to maintain stable prices in the country, also chooses to **"target" retail inflation** instead of wholesale inflation.

[Source](#)

17) Consider the following statements.

1. Import cover is the number of months of imports that the country's foreign exchange reserves can finance.
2. Import cover is an important indicator of the stability of the currency.
3. At present India's import cover is more than 10 months.

Which of the above statements is/are correct?

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

Solution: d)

Import cover of reserves is a traditional trade-based indicator of reserve adequacy. **It is defined in terms of the number of months of import equivalent to reserves.**

Import cover is an important indicator of the stability of the currency.

According to currency experts, eight to ten months of import cover is essential for the stability of the currency. India's foreign exchange reserve cover has fallen to 15.8 months at the end of June 2021, from 17.4 months at end-March 2021, according to the Reserve Bank of India.

[Source](#)

18) Movements in the foreign currency assets (FCA) in India occur mainly on account of

1. Purchase and sale of foreign exchange by the RBI
2. Income arising out of the deployment of the foreign exchange reserves
3. External aid receipts of the Central Government
4. Effects of revaluation of the assets

Select the correct answer code:

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

Solution: d)

“Movements in the FCA occur mainly on account of purchases and sales of foreign exchange by the RBI, income arising out of the deployment of the foreign exchange reserves, external aid receipts of the Central Government and the effects of revaluation of the assets,”

[Source](#)



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2. Ecology and Environment

- 1) In India, in the last 10 years the maximum number of elephants were killed due to
- Train hits
 - Poaching
 - Electrocution
 - Poisoning

Solution: c)

Big loss
 Figures provided by the Union Environment and Forest Ministry on the deaths of elephants across the country

Cause of death	No. of elephants killed*
Electrocution	741
Train hits	186
Poaching	169
Poisoning	64
Total	1,160

(*2009-10 to December 31, 2020)

Source

- 2) Consider the following statements regarding Intergovernmental Panel on Climate Change (IPCC)
- IPCC is a joint initiative of World Meteorological Organization (WMO) and United Nations Development Programme (UNDP).
 - IPCC reports are a key input into international climate change negotiations.

Which of the above statements is/are incorrect?

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

Solution: a)

- 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.

- 3) Under the Wild Life (Protection) Act, 1972, Wildlife Crime Control Bureau (WCCB) is mandated to
- Collect and collate intelligence related to organized wildlife crime activities and to disseminate the same to State and other enforcement agencies.
 - Establish a centralized wildlife crime data bank.
 - Assists and advises the Customs authorities in inspection of the consignments of flora & fauna.
 - Assist international organizations concerned for universal action for wildlife crime control.

Select the correct answer code:

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

Solution: d)

Wildlife Crime Control Bureau is a statutory multi-disciplinary body established by the Government of India under the Ministry of Environment and Forests, to combat organized wildlife crime in the country.

Under Section 38 (Z) of the Wild Life (Protection) Act, 1972,

- it is mandated to **collect and collate intelligence related to organized wildlife crime activities** and to disseminate the same to State and other enforcement agencies for immediate action so as to apprehend the criminals;
- to **establish a centralized wildlife crime data bank**;
- co-ordinate actions by various agencies in connection with the enforcement of the provisions of the Act;
- **assist foreign authorities and international organization concerned to facilitate co-ordination and universal action for wildlife crime control**;
- capacity building of the wildlife crime enforcement agencies for scientific and professional investigation into wildlife crimes and assist State Governments to ensure success in prosecutions related to wildlife crimes;
- and advise the Government of India on issues relating to wildlife crimes having national and international ramifications, relevant policy and laws.
- It also assists and **advises the Customs authorities in inspection of the consignments of flora & fauna** as per the provisions of Wild Life Protection Act, CITES and EXIM Policy governing such an item.

- 4) The coastal ecosystems of mangroves, tidal marshes, and seagrass meadows provide numerous benefits and services along coasts like
1. Regulation of coastal water quality
 2. Sequester and store coastal blue carbon from the atmosphere
 3. Protection from storms and sea level rise
 4. Provision of habitat for commercially important fisheries
 5. Food security for many coastal communities

Select the correct answer code:

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

Solution: d)

The coastal ecosystems of mangroves, tidal marshes, and seagrass meadows provide numerous benefits and services that are essential for climate change adaptation along coasts globally, including protection from storms and sea level rise, prevention of shoreline erosion, regulation of coastal water quality, provision of habitat for commercially important fisheries and endangered marine species, and food security for many coastal communities. Additionally, these ecosystems sequester and store significant amounts of coastal blue carbon from the atmosphere and ocean and hence are now recognized for their role in mitigating climate change.

- 5) When coal is burned, it releases a number of airborne toxins and pollutants like
1. Lead
 2. Mercury
 3. Nitrogen oxides
 4. Sulfur dioxide

Select the correct answer code:

- a) 1, 2, 3

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

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.

6) Consider the following statements regarding Carbon offsetting.

1. Carbon offsetting allows a country to help reach its own emissions reduction targets by funding emission reductions in another country.
2. The United Nation's Clean Development Mechanism (CDM) set up under the 1997 Kyoto Protocol is first major Carbon offsetting scheme.
3. Carbon offsets can be bought by individuals, companies or countries.

Which of the above statements is/are correct?

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

Solution: d)

Carbon offsetting allows a country to help reach its own emissions reduction targets by funding emission reductions in another country. Companies are also increasingly using carbon credits to offset their emissions. **The first major offsetting scheme, the U.N.s clean development mechanism (CDM),** was set up under the 1997 Kyoto Protocol, in which 190 countries agreed country-by-country emission reduction targets. The scheme was designed to help fund emission reduction projects in developing countries, while also providing offset credits to the developed world to help meet its Kyoto targets.

More than 8,100 projects in 111 countries have registered with the CDM scheme, which has handed out over 2 billion carbon credits, called Certified Emission Reductions (CERs), representing 2 billion tonnes of carbon dioxide reduction.

Projects registered under the scheme range from capturing and using methane gasses in pig manure to create electricity to replacing traditional wood and coal burning cookstoves with cleaner alternatives such as ethanol.

Offsets can be bought by individuals, companies or countries.

7) Consider the following statements regarding Sperm whales.

1. Sperm whales are a protected species under the Wildlife Protection Act.
2. Ambergris is a waxy substance that originates from the digestive system of the sperm whales.
3. In India, Ambergris is a tradable commodity, since they have high medicinal properties.

Which of the above statements is/are correct?

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

Solution: a)

Ambergris, which means gray amber in French, is a **waxy substance that originates from the digestive system of the protected sperm whales.**

While there is a **ban on possession and trade of ambergris** in countries like the USA, Australia and **India**, in several other countries it is a tradable commodity, though with limitations in some of them. In the Indian context, the **sperm whales are a protected species under Schedule 2 of the Wildlife Protection Act** and **possession or trade of any of its by-products, including Ambergris and its byproducts, is illegal under provisions of the Wildlife Protection Act, 1972.**



[Source](#)

- 8) Trace metals like cadmium or copper are essential for ocean productivity. Studying the interactions of trace metals and marine plant and animal life helps to
1. Track the movement of water masses responsible for ocean circulation
 2. Study the biological, geochemical and ecosystem processes and food web analyses in the oceans.
 3. Understand the nutrient cycling and productivity of the oceans

Select the correct answer code:

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

Solution: d)

What is the objective of studying the interactions of trace metals and marine plant and animal life?

- Trace metals like cadmium or copper are supplied to oceans via continental run-offs, atmospheric deposition, hydrothermal activities and continental shelf interaction.
- They are essential for ocean productivity. Scientists say that it is important to **understand the interactions of trace metals** with marine biota “for having a **holistic understanding about nutrient cycling and productivity of the oceans**”.
- Apart from their reactions on marine life, isotopic forms of trace metals can be utilised to **track the movement of water masses responsible for ocean circulation** and as tools to study the biological, geochemical and ecosystem processes and food web analyses.

9) Consider the following statements regarding Green Hydrogen.

1. Green Hydrogen is the hydrogen generated through renewable energy sources and the carbon generated from the process is captured and stored without dispersing it in the atmosphere.
2. The major challenge in the usage of green hydrogen will be its storage, because it requires large volumes for its storage.

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)

- While **hydrogen generated through renewable energy sources is green**, it is blue when the carbon generated from the process is captured and stored without dispersing it in the atmosphere. When the carbon is not captured, the generated hydrogen is labelled grey.
- The **major challenge in the usage of green hydrogen will be its storage**. Given the very low density of hydrogen, **it will require large volumes for its storage**.
- Alternatively, if one chooses to store it in the liquid form, reducing the storage space requires the maintenance of temperatures as low as minus 253° C. This will entail huge costs.
- The ‘production cost’ of ‘Green hydrogen’ has been considered to be a prime obstacle to the usage of green hydrogen.

10) Consider the following pairs:

1. Operation “Save Kurma” : Tackle the poaching, transportation and illegal trade of live turtles and tortoises.
2. Operation “Lesknow” : Tackle illegal trade of Shahtoosh Shawl made from Chiru wool.
3. Operation “Softgold” : Tackle illegal wildlife trade in lesser-known species of wildlife.
4. Operation “Clean Art” : Tackle illegal wildlife trade in Mongoose hair brushes.

Which of the above pairs is/are correctly matched?

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

Solution: c)

The Wildlife Crime Control Bureau (WCCB) had launched **operation “Save Kurma” to focus on the poaching, transportation and illegal trade of live turtles and tortoises**.

Another operation “**Operation Turtshield- I”** and Operation Turtshield-II” was taken up to **tackle the illegal trade of live turtles**.

WCCB conducted **Operation “Lesknow”, “Lesknow-II”** and Operation “Lesknow-III” to gain attention of enforcement agencies towards the **illegal wildlife trade in lesser-known species of wildlife**.

WCCB’s “**Operation Clean Art”** towards **illegal wildlife trade in Mongoose hair brushes**.

Another “**Operation Softgold”** to tackle Shahtoosh Shawl (made from Chiru wool) **illegal trade** and to spread awareness among the weavers and traders engaged in this trade.

Source

11) Consider the following statements.

1. Operation Birbil : Tackle illegal trade of live birds
2. Operation Freely : Tackle illegal trade in wild cat and wild bird species.
3. Operation Wildnet : Tackle the illegal wildlife trade over internet using social media platforms.

Which of the above statements is/are correct?

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

Solution: b)

The agency also conducted “**Operation Birbil”** to curb **illegal trade in wild cat and wild bird species**.

The other operations include **“Operation Freely” on illegal trade of live birds** and **“Operation Wetmark”** to ensure prohibition of sale of meat of wild animals in wet markets across the country.

“Operation Wildnet”, “Operation Wildnet-II”, “Operation Wildnet-III” and “Operation Wildnet-IV” were aimed to draw the attention of the enforcement agencies within the country to focus their attention on the ever-increasing **illegal wildlife trade over internet using social media platforms**.

[Source](#)

12) Consider the following statements regarding National Board for Wildlife (NBWL).

1. The National Board for Wildlife (NBWL) is a “statutory board” constituted under the Wild Life (Protection) Act, 1972.
2. National Board for Wildlife has power to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.
3. The role of National Board for Wildlife is advisory in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country.

Which of the above statements is/are correct?

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

Solution: d)

About National Board for Wildlife:

- It is a “Statutory Organization” constituted under the Wildlife Protection Act, 1972.
- **Its roles is “advisory” in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country.**
- Primary function of the Board is to promote the conservation and development of wildlife and forests.
- **It has power to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.**
- No alternation of boundaries in national parks and wildlife sanctuaries can be done without approval of the NBWL.
- The NBWL is chaired by the Prime Minister.

13) Consider the following statements.

1. At present maximum percent of India's electricity generation is from renewable sources and nuclear energy combined.
2. Among fossil fuels, coal constitutes the maximum share in electricity generation in India.

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)

About 80% of India's electricity generation is from fossil fuels. Among fossil fuels, coal constitutes the maximum share in electricity generation in India.

[Source](#)

14) Consider the following statements.

1. Buxa tiger reserve is located in West Bengal.
2. Buxa tiger reserve is known for high tiger density in the region.

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)

An increase in the forest density and the big cat prey base, especially deer, had attracted a **Royal Bengal tiger, a first such sighting in 23 years**, to the Buxa reserve in Airpurduar district in north Bengal.

Source

15) Consider the following statements regarding Seabuckthorn.

- 1. It is a shrub which produces an orange-yellow coloured edible berry.
- 2. It is a soil-binding plant which prevents soil-erosion, checks siltation in rivers and helps preserve floral biodiversity.
- 3. In India, it is found in the Himalayan region, generally in dry areas such as the cold deserts of Ladakh and Spiti.

Which of the above statements is/are correct?

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

Solution: d)

What is seabuckthorn?

It's a shrub which produces an orange-yellow coloured edible berry. In India, it is **found above the tree line in the Himalayan region, generally in dry areas such as the cold deserts of Ladakh and Spiti.** In Himachal Pradesh, it is locally called chharma and grows in the wild in Lahaul and Spiti and parts of Kinnaur.

As a folk medicine, seabuckthorn has been widely used for treating stomach, heart and skin problems. In the last few decades, scientific research worldwide has backed many of its traditional uses. "Its fruit and leaves are rich in vitamins, carotenoids and omega fatty acids, among other substances, and it can help troops in acclimatising to high-altitude

Besides being an important source of fuelwood and fodder, seabuckthorn is a **soil-binding plant which prevents soil-erosion, checks siltation in rivers and helps preserve floral biodiversity.**



16) Consider the following statements.

- 1. Decarbonization refers to the conversion of the economic system or individual carbon emitting entity reducing the carbon intensity of its emissions over time.
- 2. A "carbon credit" is an electronic unit that represents one kg of CO2 equivalent that is reduced or sequestered from projects applying an approved carbon credit methodology.

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)

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.

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.

17) Consider the following statements.

1. The Ministry of Environment, Forest, and Climate Change has statutory and constitutional obligations to protect the forests in India.
2. Approval for the use of forest land for non-forestry use is granted under the provisions of Forest (Conservation) Act, 1980.
3. Protected areas, including national parks are not allowed for non-forestry purposes.

Which of the above statements is/are correct?

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

Solution: b)

A total of 82,893.61 ha of forest land has been approved for non-forestry use under the **Forest (Conservation) Act, 1980**, from April 2016 to March 2021.

206 proposals involving 4,118.109067 ha area within **Protected Areas, including national parks and sanctuaries, have been recommended by the Standing Committee of National Board for Wildlife** during 2020 and 2021.

Among the State/UT-wise approved areas for use of forest land for non-forestry purpose, Jammu and Kashmir had the least: 1.20 ha, all of which was approved in 2020-21. Madhya Pradesh had the highest, with 19638.41 ha being approved for diversion.

Source

18) Kinnow, a high yield citrus tree fruit is grown extensively in which state?

- a) Kerala
- b) Uttarakhand
- c) Punjab
- d) Sikkim

Solution: c)

The start of **kinnow season in Punjab** also brings with it the falling fruit, which is considered a total waste by farmers. Farmers can collect these dropped fruits from their kinnow fields and prepare bio-enzymes (BEs) at a low cost.

Kinnow is a year-long duration crop and the main harvesting period is from November-end to March, but some varieties of citrus fruit start coming into the markets in October. Horticulture department experts say nearly 15-

20 per cent (1.5 lakh to 2 lakh tonnes) of the total kinnow production falls from the tree before and during the harvesting period.



[Source](#)

19) Consider the following statements regarding tagging of Olive Ridley sea turtles.

1. Researchers of the Zoological Survey of India (ZSI) carried tagging of Olive Ridley sea turtles at Rushikulya rookery along Odisha coast.
2. It would help identifying the migration path and places visited by the Olive Ridley sea turtles after congregation and nesting.
3. Tagging of Olive Ridley sea turtles is undertaken in Odisha every year before mass nesting.

Which of the above statements is/are correct?

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

Solution: b)

Scientists have resumed tagging of Olive Ridley sea turtles at Rushikulya rookery along Odisha coast, which would help them identify the migration path and places visited by the marine reptiles after congregation and nesting.

Researchers of the Zoological Survey of India (ZSI) are carrying out tagging of Olive Ridley turtles. The **exercise was undertaken in Odisha in January 2021 after a span of about 25 years** and 1,556 turtles had been tagged.

[Source](#)

20) Recently Researchers of the Zoological Survey of India (ZSI) carried out tagging of Olive Ridley turtles. This would help to

1. Identify the migration path and places visited by Olive Ridley turtles.
2. Inter-rookery movement of turtles
3. Measure the growth of turtles

Select the correct answer code:

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

Solution: d)

Scientists have resumed tagging of Olive Ridley sea turtles at Rushikulya rookery along Odisha coast, which would help them identify the migration path and places visited by the marine reptiles after congregation and nesting.

We are studying the path taken by turtles in the sea, if they keep coming to one nesting site for laying eggs, and the number of sites they visit over the years. Besides, the **growth of turtles could be measured during the current study.**

The study would also reveal the **inter-rookery movement of turtles** in Odisha. The migration pattern to other countries would be recorded in detail.

Source

21) Consider the following pairs of wetlands and their location

1. Renuka Wetland : Himachal Pradesh
2. Harike Wetland : Gujarat
3. Wadhvana Wetland : Punjab
4. Kabartal Wetland : Bihar

Which of the above pairs is/are correctly matched?

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

Solution: c)

Wadhvana Wetland is an internationally important wetland situated in Gujarat.
Harike Wetland is located in Punjab

22) Consider the following statements regarding BioCNG:

1. It is a purified form of biogas with a major content of butane and propane.
2. It can be obtained from pure cellulosic biomass.
3. Increased production of BioCNG in India will help reduce import dependency on petroleum products.

Which of the above statements is/are correct?

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

Solution: c)

Bio-CNG is a purified form of biogas with over **95% pure methane gas**. It is similar to natural gas in its composition (97% methane) and energy potential. While natural gas is a fossil fuel, Bio-CNG is a renewable form of energy produced from agricultural and food-waste. Bio-CNG is being looked at as an environment-friendly alternative to diesel.

This Bio-CNG can be used to power automobiles with the same efficiency as fossil fuel CNG.

Bio-CNG has a high calorific value and can be used in blast furnaces; also it can be converted into electricity.

Various sources of biomass are as follows:

<i>Polysaccharides</i>	<i>Semi Cellulosic Biomass</i>	<i>Pure Cellulosic</i>
<ul style="list-style-type: none"> • Primary (SUGARS) • Spent Wash • Press Mud • Wasted Food Grains 	<ul style="list-style-type: none"> • Semi Cellulosic Biomass • Rice Straw • Wheat Straw • Soya Thrash • Napier Grass 	<ul style="list-style-type: none"> • Cellulosic Biomass (2nd Generation Fuel) • Cotton straw • Bagasse • Bamboo

3. Geography

- 1) The ocean has several micronutrients, minerals and trace metals like cadmium or copper. Trace metals are supplied to oceans via
1. Continental shelf interaction
 2. Continental run-offs
 3. Atmospheric deposition
 4. Hydrothermal activities

Select the correct answer code:

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

Solution: d)

Trace metals like cadmium or copper are supplied to oceans via **continental run-offs, atmospheric deposition, hydrothermal activities and continental shelf interaction**. They are essential for ocean productivity.

- 2) Consider the following statements regarding Wet-bulb temperature.
1. Wet-bulb temperature is used to measure both heat and humidity of a place.
 2. It represents the lowest temperature air can reach by evaporation of water.
 3. Generally a dry heatwave is more dangerous than a humid heatwave for human beings.

Which of the above statements is/are correct?

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

Solution: a)

When human beings feel hot, they cool themselves by sweating. However, if the humidity is too high, sweating no longer works and one risks dangerous overheating.

In this case, **“wet-bulb” temperature is used to measure both heat and humidity**, helping estimate whether conditions are safe for humans or not.

Measured on a different scale compared with normal temperatures, where 35 degrees Celsius is the maximum or threshold limit, wet-bulb temperature of 32 degrees can mean that even fit, acclimatised people will not be able to work easily.

With climate change, the number of such potentially dangerous days, where high heat and humidity combine, are also increasing.

At present, most of India experiences 12 to 66 days annually of this potentially deadly heat and high humidity combination with hotspots along the east coast.

A humid heatwave was a lot more dangerous compared with a dry heatwave.

While the human skin has a temperature of around 35 degrees Celsius, a wet-bulb with the same heat means sweat can no longer be used to cool the body.

Wet-bulb temperature is measured by wrapping a wet cloth around the bulb of a thermometer. It **represents the lowest temperature air can reach by evaporation of water**. Internationally, the wet-bulb globe temperature is calculated by using a globe thermometer and additionally accounting for solar radiation and wind speed.

WHAT IS WET-BULB TEMPERATURE

Photo: Piyal Bhattacharjee

➤ Wet-bulb temperature is the lowest temperature to which air can be cooled by the evaporation of water into the air

➤ It is measured by factoring in heat and humidity levels

➤ Theoretically, if wet-bulb temperature reaches 35 degrees Celsius –its highest point– it means humans can no longer lose internal body heat by sweating and cool themselves

➤ This could potentially lead to heatstrokes



Wet-bulb days in Delhi each year at present	63 days
RCP 8.5 or business as usual scenario (2050)	99 days
RCP 8.5 or business as usual scenario (2100)	131 days
RCP 2.6 (stringent scenario where global temperature rise will be below 2°C by 2100)	81 days

[Source](#)

- 3) Nigeen Lake is located in
- Ladakh
 - Jammu and Kashmir
 - Himachal Pradesh
 - Uttarakhand

Solution: b)

Nigeen Lake is a mildly eutrophic lake located in Srinagar, Jammu and Kashmir.

- 4) Chillai Kalan is the name given to 40-day period of harsh winter in
- Uttarakhand
 - Himachal Pradesh
 - Kashmir Valley
 - Sikkim

Solution: c)

Kashmir is in a deep freeze as the 40-day harshest spell of winter, locally called 'chillai kalan'.

Source

4. Government Schemes and Programmes

1) Consider the following statements regarding Member of Parliament Local Area Development (MPLAD) Scheme.

1. MPs only recommend projects, but the final choice and implementation rests with the district authorities.
2. The scheme is administered by Ministry of Statistics and Programme. Implementation (MOSPI).
3. As per the guidelines, 100 percent utilisation of the funds allocated is mandatory.

Which of the above statements is/are correct?

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

Solution: a)

The scheme is administered by the **Ministry of Statistics and Programme. Implementation (MOSPI)**.

MPs only recommend projects, but the final choice and implementation rests with the district authorities.

Observations made by the Comptroller and Auditor General (CAG) of India, in a report make it clear: Expenditure incurred by the executing agencies being less than amount booked.

Utilisation of funds between 49 to 90% of the booked amount;

2) Consider the following statements regarding Pre-Legislative Consultation Policy (PLCP).

1. The Pre-Legislative Consultation Policy (PLCP) mandates that whenever the Government makes any laws, it must place a draft version of it in the public domain.
2. The policy also says that, a note explaining the law in simple language and justifying the proposal, its financial implication, impact on the environment and fundamental rights should be uploaded.
3. The PLCP was adopted through an act of Parliament.

Which of the above statements is/are correct?

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

Solution: a)

- **The Pre-Legislative Consultation Policy (PLCP) 2014** mandates that **whenever the Government makes any laws (bills, rules, regulations etc.), it must place a draft version of it in the public domain for at least 30 days.**
- The policy also says that along with the draft, **a note explaining the law in simple language and justifying the proposal, its financial implication, impact on the environment and fundamental rights, a study on the social and financial costs of the bill, etc. should be uploaded.**
- The respective departments should also upload the summary of all the feedback that they receive on the circulated draft.
- The PLCP was formulated based on the broad recommendations of the National Advisory Council headed by Sonia Gandhi (2013) and the National Commission to Review the Working of the Constitution (2002).
- It aimed to create an **institutionalized space for public participation in law-making processes.**
- This policy provides a **forum for citizens and relevant stakeholders** to interact with the policymakers in the executive during the initial stages of law-making.

The **absence of a statutory or constitutional right** has watered down its effect.

- 3) Consider the following statements regarding public spending on health.
1. In India, the total public spending on health as a percentage of GDP is around 2.5% of GDP.
 2. The Union government spends around a third of the total government spending whereas the majority is borne by the States.

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)

Total public spending on health as a percentage of GDP has increased to a historic high of **1.35% of GDP**, finally breaking through the 1%-1.2% mark of GDP.

The Union government traditionally spends around a third of the total government spending whereas the majority is borne by the States.

Source

- 4) Consider the following statements regarding Sustainable Alternative Towards Affordable Transportation (SATAT) scheme.
1. It aims to extract economic value from bio-mass waste in the form of Compressed Bio Gas (CBG) and bio-manure.
 2. The initiative was launched by the Ministry of Petroleum & Natural Gas in association with Public Sector Undertaking (PSU) Oil Marketing Companies (OMC).
 3. Rural households are incentivised to supply locally available biomass including crop stubble or dung cakes to Compressed Bio-Gas (CBG) production plants being set up under the SATAT scheme.

Which of the above statements is/are correct?

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

Solution: b)

Sustainable Alternative Towards Affordable Transportation (SATAT) is an initiative aimed at setting up of Compressed Bio-Gas (CBG) production plants and make it available in the market for use in automotive fuels by inviting Expression of Interest from potential entrepreneurs.

The initiative was launched in October 2018 by the **Ministry of Petroleum & Natural Gas in association with Public Sector Undertaking (PSU) Oil Marketing Companies (OMC)** viz. Indian Oil Corporation Ltd., Bharat Petroleum Corporation Ltd. and Hindustan Petroleum Corporation Ltd.

Government of India, under the SATAT initiatives envisages setting up of 5000 CBG plants by 2023-24 with production target of 15 MMT.

Statement 3 – There is no such provision in the scheme.

[Source](#)

[Source](#)

- 5) For enhancing India's Manufacturing Capabilities and Exports, the government implements Production Linked Incentive Scheme for which of the following sectors?
1. Pharmaceuticals Drugs
 2. White Goods (ACs and LEDs)
 3. Toy industry
 4. Textiles and Apparel

5. Food products

Select the correct answer code:

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

Solution: b)

Keeping in view India's vision of becoming 'Atmanirbhar' and to enhance India's Manufacturing Capabilities and Exports, an outlay of INR 1.97 lakh crore has been announced in Union Budget 2021-22 for PLI schemes for 13 key sectors for a period of 5 years starting from fiscal year (FY) 2021- 22. These 13 sectors includes already existing 3 sectors named (i) Mobile Manufacturing and Specified Electronic Components, (ii) Critical Key Starting materials/Drug Intermediaries & Active Pharmaceutical Ingredients, and (iii) Manufacturing of Medical Devices and 10 new key sectors which have been approved by the Union Cabinet recently in November 2020. These 10 key sectors are:

(i) Automobiles and Auto Components, (ii) **Pharmaceuticals Drugs**, (iii) Specialty Steel, (iv) Telecom & Networking Products, (v) Electronic/Technology Products, (vi) **White Goods (ACs and LEDs)**, (vii) **Food Products**, (viii) **Textile Products**: MMF segment and technical textiles, (ix) High efficiency solar PV modules, and (x) Advanced Chemistry Cell (ACC) Battery.

The Toy Association of India (TAI), that has over 500 toy manufacturers as its members, also said getting the industry under the PLI scheme was critical for its growth.

Source Source

- 6) Consider the following statements regarding National Institutional Ranking Framework (NIRF).
1. National Institutional Ranking Framework ranks only the centrally funded institutions such as the Indian Institutes of Technology (IITs) and central universities.
 2. NIRF was adopted by the Ministry of Education and is the first-ever effort by the government to rank higher education institutions (HEIs) in the country.
- 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)

The National Institutional Ranking Framework (NIRF) was approved by the **Ministry of Education** (Erstwhile Ministry of Human Resource Development) in September 2015.

It is the **first-ever effort by the government to rank Higher Education Institutions (HEIs) in the country**. Participation in NIRF was made compulsory for all government-run educational institutions in 2018.

It ranks **State-run higher education institutions (HEIs) together with centrally funded institutions** such as the Indian Institutes of Technology (IITs), the Indian Institute of Science, the National Institutes of Technology, central universities, etc.

[Source](#)

- 7) National Institute Ranking Framework (NIRF) assesses education institutions on which of the following parameters?
1. Teaching, learning and resources
 2. Research and professional practices

- 3. Graduation outcomes
- 4. Outreach and inclusivity

Select the correct answer code:

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

Solution: d)

In order to be ranked, all education institutions are assessed on five parameters: **teaching, learning and resources, research and professional practices, graduation outcomes, outreach and inclusivity, and perception.**

[Source](#)

8) Consider the following statements.

- 1. Majority of the dams in India were built during early 20th century.
- 2. The ownership of dams and their maintenance predominantly falls in the purview of the States.
- 3. Central Water Commission (CWC) is the apex body that advise on issues of dam safety.

Which of the above statements is/are correct?

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

Solution: c)

India ranks third globally with 5,745 large dams in operation. According to the National Register of Large Dams prepared in June 2019 by the Central Dam Safety Organisation (CDSO) in the Central Water Commission (CWC), **67 dams were built prior to the 20th century and 1,039 dams during the first 70 years of the 20th century.**

Even though the **Central Water Commission (CWC)**, along with the Central Dam Safety Organisation (CDSO), has been functioning as the **apex body to advise States on issues of dam safety**, there is no specific Central law that governs the subject, given the situation that the **ownership of dams and their maintenance predominantly falls in the purview of the States.**

9) Consider the following statements regarding Telecom Regulatory Authority of India (TRAI).

- 1. Telecom Regulatory Authority of India (TRAI) was established through an act of parliament.
- 2. One of the objectives of TRAI is to provide a fair and transparent policy environment promoting a level playing field amongst players and facilitating fair competition.
- 3. TRAI regulates telecom services but does not have the power to fix/revise tariffs for telecom services, which is done by the Union Ministry of Finance.

Which of the above statements is/are correct?

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

Solution: b)

The Telecom Regulatory Authority of India (TRAI) was, established in 1997 by an Act of Parliament, called the **Telecom Regulatory Authority of India Act, 1997**, to regulate telecom services, including **fixation/revision of tariffs for telecom services** which were earlier vested in the Central Government.

One of the main objectives of TRAI is to provide a **fair and transparent policy environment which promotes a level playing field and facilitates fair competition.**

The TRAI Act was amended by an ordinance, effective from 24 January 2000, establishing a Telecommunications Dispute Settlement and Appellate Tribunal (TDSAT) to take over the adjudicatory and disputes functions from TRAI.

[Source](#)

10) Consider the following statements regarding Essential Commodities Act.

1. The Essential Commodities Act is an act of Parliament of India which was established to ensure the delivery of certain commodities or products, the supply of which if obstructed owing to hoarding or blackmarketing would affect the normal life of the people.

2. The states can include new commodities as and when the need arises, and only the centre can take them off the list once the situation improves.

3. The act empowers Central and State Governments concurrently to control production, supply and distribution of certain commodities when their prices rise.

Which of the above statements is/are incorrect?

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

Solution: a)

The Essential Commodities Act is an act of Parliament of India which was established to ensure the delivery of certain commodities or products, the supply of which if obstructed owing to hoarding or blackmarketing would affect the normal life of the people.

Additionally, the government can also fix the maximum retail price (MRP) of any packaged product that it declares an “essential commodity”.

The Centre can include new commodities as and when the need arises, and take them off the list once the situation improves.

The act empowers Central and State Governments concurrently to control production, supply and distribution of certain commodities in view of rising pricing. When difference arise between Centre and States, the act specifies that the Centre will prevail.

11) Consider the following statements.

1. The bulk of semiconductor manufacturing and supply capability is concentrated in countries like Taiwan, South Korea, U.S., and Japan.

2. India’s Production Linked Incentive scheme provides 100% of the cost of setting up greenfield semiconductor fabs by way of fiscal support.

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 bulk of semiconductor manufacturing and supply capability concentrated in a handful of countries including **Taiwan, South Korea, U.S., Japan** and, more recently, China.

India's Production Linked Incentive scheme intends to give only 50% of the cost of setting up at least two greenfield semiconductor fabs by way of fiscal support.

Source

12) Consider the following statements.

1. The Sinho Commission was constituted to recommend welfare measures for the economically weaker sections (EWS) category, including reservation.
2. At present persons who are not covered under the scheme of reservation for SCs, STs and other backward classes (OBCs), and whose family has gross annual income below Rs 8 lakh, are identified as EWSs for benefit of reservation.
3. The ceiling for determining EWS is the same as the limit for determining the OBC "creamy layer" for reservation.

Which of the above statements is/are correct?

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

Solution: d)

The ceiling for determining EWS (Rs 8 lakh) is the same as the limit for determining the other backward classes (OBC) "creamy layer" for reservation for the children of people outside of government.

Under the 2019 notification, persons who are not covered under the scheme of reservation for SCs, STs and OBCs, and whose family has gross annual income below Rs 8 lakh, are to be identified as EWSs for benefit of reservation.

EWS reservation was granted based on the recommendations of a commission headed by Major General (retd) S R Sinho. The **Sinho Commission** recommended that all below poverty line (BPL) families within the general category as notified from time to time, and also all families whose annual family income from all sources is below the taxable limit, should be identified as EBCs (economically backward classes).

[Source](#)

13) Consider the following statements regarding Cooperative Societies.

1. Under the Indian Constitution, Cooperatives are a concurrent subject.
2. In India, there are many Cooperative societies whose members and areas of operation are spread across more than one state.
3. At present the Ministry of Agriculture is responsible for administrative, legal and policy framework for strengthening the cooperative movement in India.

Which of the above statements is/are correct?

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

Solution: b)

Cooperatives are a state subject, but there are many societies such as those for sugar and milk, banks, milk unions etc whose **members and areas of operation are spread across more than one state.**

The **Ministry of Co-operation** is a ministry under the Government of India which was formed in July 2021. The ministry provides a separate **administrative, legal and policy framework for strengthening the cooperative movement in the country.**

[Source](#)

14) *Digital news media and over-the-top platforms (OTT Platforms)* in India are regulated by

- a) Ministry of Electronics and Information Technology
- b) Ministry of Home Affairs
- c) Ministry of Information and broadcasting
- d) They are self-regulated

Solution: c)

Digital news media and over-the-top platforms (OTT Platforms) in India are regulated by Ministry of information and broadcasting, based on the Information Technology (Guidelines for Intermediaries and Digital Media Ethics Code) Rules 2021 (Rules).

[Source](#)

15) Consider the following statements.

1. The Foreign Contribution Regulation Act (FCRA) registration is mandatory for NGO or association to receive foreign funds or donations.

2. Considering the philanthropic work done by Missionaries of Charity (MoC), a Catholic religious congregation set up by Mother Teresa, is exempted from FCRA registration to receive foreign donations.

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 Union Home Ministry (MHA) said that it has refused to renew the FCRA registration of Missionaries of Charity (MoC), a Catholic religious congregation set up by Nobel laureate Mother Teresa.

The Foreign Contribution Regulation Act (FCRA) registration is mandatory for any NGO or association to receive foreign funds or donations.

[Source](#)

16) Consider the following statements regarding the recently launched Indian Space Association (ISpA).

1. Indian Space Association is the private sector arm of Indian Space Research Organisation (ISRO).

2. ISpA will work towards building global linkages for the Indian space industry to bring in critical technology and investments into the country.

3. ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

Which of the above statements is/are correct?

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

Solution: c)

Prime Minister Narendra Modi **launched the Indian Space Association (ISpA)**, an industry body consisting of various stakeholders of the Indian space domain. The members of the organisation include government bodies such as Indian Space Research Organisation (ISRO) and private telecom companies such as Bharti Airtel's One Web, Tata Group's Nelcom, L&T, MapMyIndia, and others.

ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

ISpA said it would engage with stakeholders across the ecosystem for the formulation of an enabling policy framework which fulfils the government vision of leading commercial space exploration.

[Source](#)

17) Consider the following statements.

1. The Prohibition of Child Marriage (Amendment) or PCMA Bill, 2021 seeks to raise the age of marriage for women to 21.
2. All religious communities in India have a codified personal law, that deals with marriage, dissolution of marriage, guardianship, etc.

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)

Muslims don't have a codified personal law unlike other religious communities. The Muslim Personal (Shariat) Application Act, 1937 states that Shariat or the Islamic law will apply in all questions regarding marriage, dissolution of marriage, maintenance, dower, guardianship, gifts, etc.

The Prohibition of Child Marriage (Amendment) or PCMA Bill, 2021 which has been referred to a Standing Committee seeks to raise the age of marriage for women to 21, making it the same as the age of marriage for men.

Source

18) Consider the following statements regarding Indian Council for Cultural Relations (ICCR).

1. The Indian Council for Cultural Relations (ICCR), is an autonomous organisation of the Government of India, involved in cultural exchange with other countries and their people.
2. It was founded by Jawaharlal Nehru.
3. It can issue binding orders to promote Indian culture, like making it mandatory to play Indian music at airports and railway stations.

Which of the above statements is/are correct?

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

Solution: a)

The Indian Council for Cultural Relations (ICCR), is an autonomous organisation of the Government of India, involved in India's global cultural relations, through cultural exchange with other countries and their people. It was founded on 9 April 1950 by **Maulana Abul Kalam Azad**, the first Education Minister of independent India.

The Ministry of Civil Aviation has written to Indian airlines and airports in the country asking them to play Indian music following a request from the Indian Council for Cultural Relations (ICCR).

Source

5. Science and Technology

- 1) Consider the following statements regarding Distributed ledger technology (DLT).
1. Distributed ledger technology (DLT) is a digital system for recording the transaction of assets in which the details are recorded in multiple places at the same time.
 2. Blockchain technology is a specific kind of Distributed ledger technology.
 3. Unlike traditional databases, distributed ledgers have a central data store or administration functionality.

Which of the above statements is/are correct?

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

Solution: a)

Distributed ledger technology (DLT) and Block Chain technology:

- **Distributed ledger technology (DLT) is a digital system for recording the transaction of assets in which the transactions and their details are recorded in multiple places at the same time.**
- Unlike traditional databases, **distributed ledgers have no central data store** or administration functionality.
- Whether distributed ledger technologies, such as blockchain, will revolutionize how governments, institutions and industries work is an open question.
- **Blockchain technology is a specific kind of DLT** that came to prominence after Bitcoin, a cryptocurrency that used it, became popular.
- Cryptocurrencies such as Bitcoin use codes to encrypt transactions and stack them up in blocks, creating Blockchains. It is the use of codes that differentiates cryptocurrencies from other virtual currencies.

2) Consider the following statements.

1. Antibodies are the first line of defence against viral infection and monoclonal antibodies (mAbs) are used in its treatment.
2. Every single mutation of the virus independently increase the virulence and the combination of them always aggravates the virus properties.

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)

World Health Organization (WHO) designated Omicron, a SARS-CoV-2 variant, as a 'variant of concern' (VOC).

It took WHO several weeks to designate older VOCs such as Alpha, Beta and Delta as a VOC when they emerged.

Several of the mutations confer the virus resistance to monoclonal antibodies (mAbs) such as etesevimab, bamlanivimab, casirivimab and their combinations. **Antibodies are the first line of defence against viral infection and mAbs are used in treatment.** However, it is important to emphasise that **every single mutation does not independently increase virulence and combinations of them might sometimes temper, and sometimes aggravate, virus properties.**

Source

3) Which of the following services generally use encryption to secure data transmission?

1. Messaging services
2. Payment gateways
3. Wireless microphones and Bluetooth devices
4. Bank ATMs.

Select the correct answer code:

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

Solution: d)

Encryption is the process of encoding messages or information in such a way that only authorized parties can read it.

All **messaging services** like WhatsApp, Viber, Google Chat, Yahoo messenger use encrypted services. Banks (**payment gateways**) and e-commerce sites also use encryption to protect financial and private data including passwords.

Encryption is also used to protect data in transit, for example data being transferred via networks (e.g. the Internet, e-commerce), **mobile telephones, wireless microphones, wireless intercom systems, Bluetooth devices and bank automatic teller machines.**

4) Consider the following statements regarding IN-SPACe (Indian National Space Promotion and Authorisation Centre).

1. IN-SPACe is a single window nodal agency established to boost the commercialisation of Indian space activities.
2. It promotes the entry of the Non-Government Private Entities (NGPEs) in the Indian space sector.

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)

In 2020, the Government of India created a new organisation known as **IN-SPACe (Indian National Space Promotion and Authorisation Centre)** which is a “single window nodal agency” established to **boost the commercialisation of Indian space activities**. A supplement to the Indian Space Research Organisation (ISRO), the agency **promotes the entry of the Non-Government Private Entities (NGPEs) in the Indian space sector**. The agency will also felicitate a swift on-boarding of private players in the sector through encouraging policies in a friendly regulatory environment and by creating synergies through already existing necessary facilities.

Source

- 5) *Acinetobacter baumannii*, *Enterococcus faecalis*, *Escherichia coli* are
- a) Vectors that cause Dengue and Malaria
 - b) Drugs administered to livestock as painkillers/anti-inflammatory drugs.
 - c) Pathogens that have the ability to develop resistance to antibiotics.
 - d) None of the above

Solution: c)

Some of the pathogens to look out for are *Acinetobacter baumannii*, *Enterococcus faecalis*, *Escherichia coli*, *Salmonella typhi*, *Streptococcus pneumoniae* and many more. These pathogens are commonly implicated as causative agents of healthcare associated infections because of their **ability to develop resistance to antibiotics**.

6) Pentavalent vaccine protects against which of the following diseases?

1. Diphtheria
2. Tetanus
3. Hepatitis-C
4. Pertussis

Select the correct answer code:

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

Solution: b)

Pentavalent vaccine protects against five major diseases: diphtheria, tetanus, pertussis (whooping cough), **hepatitis B** and *Haemophilus influenzae* type b (DTP-hepB-Hib).

7) Hubble Space Telescope was successful by making which of the following observations?

1. Tracking interstellar objects
2. Capturing a comet colliding with another planet
3. Discovering moons around Pluto.
4. Probing supermassive black holes

Select the correct answer code:

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

Solution: d)

Launched into low Earth orbit in 1990, the Hubble Space Telescope has made more than 1.4 million observations, including **tracking interstellar objects, capturing a comet colliding with Jupiter, and discovering moons around Pluto**. Hubble has captured galaxies merging, **probed supermassive black holes** and has helped us understand the history of our universe.

8) Artificial Intelligence is beneficial in which of the following areas?

1. Credit card frauds prevention
2. GPS mapping technology
3. Identify nutrient deficiencies in the soil
4. Self-driving vehicles
5. Personalized online Shopping

Select the correct answer code:

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

Solution: d)

AI's exponential growth

It is embedded in the recommendations we get on our favourite streaming or shopping site; in GPS mapping technology; in the predictive text that completes our sentences when we try to send an email or complete a web search.

AI in E-Commerce

Personalized Shopping

Artificial Intelligence technology is used to create recommendation engines through which you can engage better with your customers.

Fraud Prevention

Credit card frauds and fake reviews are two of the most significant issues that E-Commerce companies deal with. By considering the usage patterns, AI can help reduce the possibility of credit card frauds taking place.

AI in Agriculture

Artificial Intelligence is used to identify defects and nutrient deficiencies in the soil. This is done using computer vision, robotics, and machine learning, AI can analyze where weeds are growing.

AI in Automobiles

Artificial Intelligence is used to build self-driving vehicles. AI can be used along with the vehicle's camera, radar, cloud services, GPS, and control signals to operate the vehicle.

9) Consider the following statements regarding Bio-enzymes.

1. Bio-enzymes are organic solutions produced through fermentation of organic waste like fruits, vegetable peels and flowers by mixing in sugar, jaggery/molasses and water.
2. Yeast can be used to slow down the process of fermentation.

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)

Bio-enzymes are organic solutions produced through fermentation of organic waste including various fruits, vegetable peels and flowers, by mixing in sugar, jaggery/molasses and water. It takes 60-100 days to ferment organic waste. **To fasten the fermentation, yeast can be used** as culture to prepare it in 45-50 days.

Source

10) Which of the following can be achieved using Nanotechnology?

1. Delivery of active drugs to target tissues in the Human eye.
2. Deliver drugs at the cell-level using DNA-based nanostructures.
3. Manipulation of nanoscale biological specimens such as bacteria, viruses and proteins in human body using light.

Select the correct answer code:

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

Solution: d)

Nanomicelles is an emerging platform for drug delivery to the eye. Conventionally nanoparticles are said to be hydrophobic and hence unsuitable for delivering water-soluble drugs. However, this has been overcome by development of **nanomicelles which are capable of delivering poorly water-soluble drug**.

DNA Origami is a process of making 2-D and 3-D nanostructures out of DNA. Since the DNA has the property of self-assembly, combination of DNA nanostructures can be used to make drug delivery systems. Given the small size of DNA-nanostructures, they can **deliver drugs at cell level**.

Researchers have developed a technique to trap and move nano-sized particles using light called as 'nanotweezers technology'. This technique uses a focused laser beam to trap and manoeuvre nanoparticles and would enable non-invasive **manipulation of fragile biological specimens such as bacteria, viruses and proteins**.

11) Graphene is being termed as wonder material due to various properties it exhibits. It is used in which of the following

1. Wearable devices like heart-rate monitors
2. Solar Cells
3. Touch screens
4. Biosensors

Select the correct answer code:

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

Solution: d)

Graphene is one-atom thick carbon-based material that is known to have high electrical and heat conductivity, high strength, flexible, optical properties etc.

Graphene has a unique property of conducting electrons very fast and hence, are used in manufacture of ultrafast transistors. Thus, it can be used in **wearable devices to monitor basic bodily functions**.

Given its optical reflectivity with an applied voltage, Graphene is said to be ideal for **photonic applications**. Thus, it can be used in **solar cells**, LEDs, **touch screens**, lasers etc., which work on the principle of photo-electric effect.

An optical fibre coated with graphene is used to detect an anti-body that is found in blood plasma, which is an indicator of presence of cardio-vascular diseases.

12) Consider the following statements regarding Proteins.

1. Proteins need to take a precise three-dimensional shape to become functional entities.
2. Most of the time, protein folding happens automatically.
3. Misfolding of proteins can cause a number of diseases like Parkinson's disease and cataract.

Which of the above statements is/are correct?

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

Solution: c)

DNA is a linear chain of nucleotides, portions of which are faithfully transcribed into linear messenger RNA. The message in this RNA is translated into strings of amino acids - proteins. **Proteins need to take a precise three-dimensional shape to become functional entities**. This **protein folding does not happen all by itself**, at least most of the time. A special bunch of proteins called molecular chaperones assist in correctly folding the protein.

Misfolding of proteins can cause a number of diseases. Alpha-synuclein protein, present in neurons, is wrongly folded in Parkinson's disease.

Aberrant folding of crystallins of the eye lens leads to cataract. In the eye lens, an abundant subset of proteins called alpha-crystallins themselves serve as chaperones.

Source

13) Consider the following statements.

1. Traditional way of diagnosing Cancer is through Histopathology, where the tumour tissues are sliced and examined under a microscope.

2. Digital histopathology involves the use of deep learning techniques and machine learning to diagnose cancer by looking at whole slide images of the tumour.

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)

Indian Institute of Technology Madras researchers use a **combination of deep learning techniques and traditional machine learning to develop a tool that can diagnose cancer by looking at whole slide images of the tumour**. The tool has been tested on datasets of breast, liver and colon cancer tissue images. It is economical in terms of the time required to process the images and analyse them.

Digital histopathology:

Traditionally, histopathologists slice the tumour tissue into approximately 20-micron-thick slices which they put on slides. They look at enlarged images of the slides and go over it cell by cell to manually classify it as cancerous or otherwise. This is highly time-consuming, and it is to alleviate this burden that digital histopathology developed. In this, after preparing the slides, the entire slide is scanned using a high-resolution microscope and digitised. This is then analysed using computerised tools.

Source

14) Which of the following are the applications of Carbon Nanotubes?

- 1. They are used as semiconductors in electrical circuits.
- 2. They can be used to reinforce graphite in tennis rackets.
- 3. They be used as a container for transporting a drug in the body.

Select the correct answer code:

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

Solution: d)

The fullerenes are a large class of allotropes of carbon and are made of balls, ‘cages’ or tubes of carbon atoms.

Nanotubes are nano-structures made of fullerenes with properties including high tensile strength, high electrical conductivity, high ductility, high heat conductivity, and relative chemical inactivity.

Nanotubes can be used to reinforce graphite in tennis rackets because they are very strong. Due to the above-mentioned properties, they are also used as **semiconductors in electrical circuits**.

The nanotube’s structure allows it to be used as a **container for transporting a drug in the body**. A molecule of the drug can be placed inside the nanotube cage. This keeps the drug ‘wrapped up’ until it reaches the site where it is needed. In this way, a dose that might be damaging to other parts of the body can be delivered safely to, for example, a tumour.

15) Consider the following statements.

- 1. The consumption of alcohol by pilots can be known by conducting pre-flight and post-flight breath analyser tests.
- 2. When the blood alcohol levels are zero in the body, there will be no effect of hangover.

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)

To ensure aviation safety is not compromised due to the consumption of alcohol by pilots, the Directorate General of Civil Aviation has issued revised guidelines for **conducting pre-flight and post-flight breath analyser tests** on the crew.

It is a well-known fact that **even when the blood alcohol levels are zero in the body, there could be some effect of hangover, which is mainly due to congeners**. These congeners may take 15 to 18 hours to get dissipated and may produce ill effects for up to 36 hours depending upon the amount of alcohol consumed.

Alcohol also interfered with the enzymatic cellular process or oxidation, causing hypoxia and reduced an individual's tolerance with increase in altitude.

Consumption of alcohol results in significant deterioration of psychomotor performance and decreases the amount of mental capacity available to deal with many essential tasks involved in the conduct of safe flight.

Source

16) Consider the following statements regarding carbon nanotubes.

1. Carbon nanotubes have higher strength than steel, but also weigh significantly more.
2. They can conduct heat and electricity better than copper.

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)

Carbon nanotube is a tube-shaped material, made of carbon, having a diameter measuring on the nanometre scale.

Researchers have developed thin Carbon Nanotube (CNT) textiles that exhibit high electrical conductivity and a level of toughness about 50 times higher than copper films, currently being used in electronics.

CNTs are at least 100 times stronger than steel, but only one-sixth as heavy, so nanotube fibres could strengthen almost any material.

17) Parvovirus, recently seen in news is a contagious virus mainly affecting

- a) Dogs
- b) Bats
- c) Pigs
- d) *Chickens* and ducks

Solution: a)

What is Parvovirus?

It is a **highly contagious viral disease that can also be life-threatening in puppies and dogs**. Parvovirus affects the intestinal tract of canines with puppies being more susceptible. Bloody diarrhoea, vomiting, drastic weight loss, dehydration and lethargy are some of the symptoms. The virus has reported a 90 per cent mortality rate.

The highly contagious virus spreads through direct contact with an infected dog or by indirect contact with a contaminated object, including the hands and clothing of people who handle infected dogs.

[Source](#)

18) Consider the following statements regarding Proton therapy.

1. It is a non-invasive treatment of cancer.
2. Once Proton therapy is conducted, the patient has very minimal chance of getting cancer from residual cancer cells again.

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)

Proton therapy is a very precise radiation therapy, used to kill cancer cells, in which a beam of high-energy protons is passed in the body. Conventionally, radiation therapy involves beaming high energy photons.

Further, like X-ray radiation, **proton therapy is a type of external-beam radiation therapy** and thus is delivered painlessly through the skin.

19) Consider the following statements regarding LIDAR (Light Detection and Ranging).

1. It is a remote sensing method that uses light in the form of a pulsed laser to calculate an objects variable distances from the earth surface.
2. It can be used to generate three-dimensional information about the shape of the Earth and its surface characteristics.
3. The use of LIDAR is restricted to natural environments.

Which of the above statements is/are correct?

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

Solution: a)

LIDAR, which stands for Light Detection and Ranging, is a **remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.**

These light pulses – combined with other data recorded by the airborne system – generate precise, **three-dimensional information about the shape of the Earth and its surface characteristics.**

A LIDAR instrument principally consists of a laser, a scanner, and a specialised GPS receiver. Airplanes and helicopters are the most commonly used platforms for acquiring LIDAR data over broad areas.

Two types of LIDAR are topographic and bathymetric. Topographic LIDAR typically uses a near-infrared laser to map the land, while bathymetric LIDAR uses water penetrating green light to also measure seafloor and riverbed elevations.

LIDAR systems allow scientists and mapping professionals to examine both natural and manmade environments with accuracy, precision, and flexibility.

Some scientists are using LIDAR to produce more accurate shoreline maps, make digital elevation models for use in geographic information systems, to assist in emergency response operations, and in many other applications.

6. International Relations and Organisations

1) Consider the following statements.

1. Budapest Convention is an international treaty that seeks to address Internet and cybercrime by harmonizing national laws, improving investigative techniques, and increasing cooperation among nations.
2. India is a signatory to Budapest Convention.

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)

Budapest Convention on Cybercrime: It is an international treaty that seeks to address Internet and computer crime (cybercrime) by harmonizing national laws, improving investigative techniques, and increasing cooperation among nations. **India is not a signatory to this convention.**

2) Consider the following statements regarding United Nations Brasilia Declaration.

1. United Nations Brasilia Declaration on road safety called for reducing road fatalities by 50% by 2020, and India has already achieved this.
2. India is a signatory to the United Nations Brasilia Declaration.

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)

India is a signatory to the United Nations Brasilia Declaration on road safety, which called for reducing road fatalities by 50% by 2020.

India has seen 26.48% reduction in road accidents and 22% drop in deaths in 2020 against 2019.

[Source](#)

3) Consider the following statements regarding G20 'Troika'.

1. Troika refers to the top grouping within the G20, that has highest per capita income.
2. Recently India joined the G20 'Troika'.

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)

India on December 1, 2021, joined the G20 'Troika'.

With this move, India has started the procedure for taking over the G20 presidency next year. **Troika refers to the top grouping within the G20 that consists of the current, previous and the incoming presidencies** — Indonesia, Italy and India.

"India will assume the G20 presidency on December 1, 2022 from Indonesia, and will convene the G20 Leaders' Summit for the first time in India in 2023

Source

- 4) Consider the following statements regarding the Exclusive Economic Zone (EEZ) of a State.
1. Exclusive Economic Zone (EEZ) consists of the seabed and subsoil that extends to the outer edge of the continental margin, or to a distance of 200 nautical miles if the outer edge of the continental margin does not extend up to that distance.
 2. According to the United Nations Convention on the Law of the Sea, the extended continental shelf of a coastal State is considered as an extension of its Exclusive Economic Zone.
 3. The sovereign rights that a coastal state may exercise in the Exclusive Economic Zone, especially rights to the resources of the water column also apply to the entire stretch of extended continental shelf.
- Which of the above statements is/are correct?
- a) 1 only
 - b) 1, 2
 - c) 1, 3
 - d) 1, 2, 3

Solution: a)

Under international law, as stated in Article 76 of the Law of the Sea Convention, the **Exclusive Economic Zone (EEZ) consists of the seabed and subsoil that extends to the outer edge of the continental margin, or to a distance of 200 nautical miles if the outer edge of the continental margin does not extend up to that distance.**

The continental shelf and the exclusive economic zone (EEZ) are distinct maritime zones. The **extended continental shelf is not an extension of the EEZ.** Some of the sovereign rights that a coastal state may exercise in the EEZ, especially rights to the resources of the water column (e.g., pelagic fisheries), do not apply to the ECS.

[Source](#)

- 5) *India has held 2+2 Ministerial Dialogue with which of the following countries.*
1. Russia
 2. Australia
 3. United States
 4. China

Select the correct answer code:

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

Solution: c)

*The Russian President Vladimir Putin's short visit to New Delhi and the inaugural **2+2 meeting between India and Russia — which is India's fourth such engagement with another country.** (The other countries include US, Australia and Japan).*

Source

- 6) Consider the following statements.
1. United Nations Convention on the Law of the Sea (UNCLOS) has established the international legal order of the seas and oceans.
 2. India supports freedom of navigation and overflight based on the principles of UNCLOS.
- 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)

India supported freedom of navigation and overflight, and unimpeded commerce based on the principles of international law, reflected notably in the UNCLOS 1982. As a State party to the UNCLOS, India promoted utmost respect for the UNCLOS, which established the international legal order of the seas and oceans.

Source

- 7) India recently launched the Connectivity Partnership, which aims at deepening the cooperation on transport, energy, digital and people-to-people contacts with
- United States of America
 - Russia
 - Japan
 - European Union (EU)

Solution: d)

In May this year at the Leader's Meeting in Porto, the **European Union (EU) and India adopted the Connectivity Partnership**, expanding our cooperation across the digital, energy, transport, and people-to-people sectors.

[Source](#)

- 8) Consider the following statements regarding the Miss Universe contest.
- Miss Universe is an international beauty contest conducted once in three years.
 - It is conducted by a United States based organisation.
 - Till now India has won the title thrice since its inception.

Which of the above statements is/are correct?

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

Solution: b)

Miss Universe is an annual international beauty pageant that is run by the **United States-based Miss Universe Organization**. Along with Miss World, Miss International, and Miss Earth, Miss Universe is one of the Big Four international beauty pageants.

Miss Universe 2021 was the 70th Miss Universe pageant. The current Miss Universe is Harnaaz Sandhu of India. This is India's first victory in 21 years, and its **third in the history of the pageant**.

- 9) UN convention on the Rights of persons with disabilities includes which of these rights for the differently abled?
- Rights to personal mobility
 - Rights to live independently and be included in the community
 - Rights to participate in political and public life
 - Rights to recreation and sport

Select the correct answer code:

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

Solution: d)

Rights specific to this convention include the rights to accessibility including the information technology, the rights to **live independently and be included in the community** (Article 19), to **personal mobility** (article 20), habilitation and rehabilitation (Article 26), and to **participation in political and public life, and cultural life, recreation and sport** (Articles 29 and 30).

10) Survival International sometimes seen in news advocates the rights of

- a) Trafficked human beings
- b) Refugees
- c) Tribal people
- d) Leprosy patients

Solution: c)

Survival International is a human rights organisation formed in 1969 that campaigns for the **rights of indigenous and/or tribal peoples** and uncontacted peoples. The organisation's campaigns generally focus on tribal peoples' desires to keep their ancestral lands. Survival International states that it aims to help foster tribal people's self-determination.

11) \$1 trillion platinum coin, recently seen in news is related to

- a) European Union (EU)
- b) USA
- c) China
- d) Russia

Solution: b)

The bipartisan fight between U.S. Democrats and Republicans over the ceiling on U.S. Government debt has thrown up an interesting idea. Some in the Democratic camp have suggested that a \$1 trillion platinum coin may be issued to bypass the debt ceiling if Republicans refuse to raise it.

The \$1 trillion platinum coin is a token coin with a face value of \$1 trillion that can be issued by the U.S. Treasury and deposited at the U.S. Federal Reserve, America's central bank. It will help the U.S. Government to get from the Fed the money that it needs to fund its spending programmes without increasing its overall liabilities.

Source

7. Polity

- 1) Consider the following statements regarding the observations made by Supreme Court with respect to Right to privacy.
1. Right to privacy is as sacrosanct as human existence and is inalienable to human dignity and autonomy.
 2. This is an absolute right.
 3. Any surveillance done on an individual by the state is an infringement of that person's right to privacy.
 4. Any violation of right to privacy by the state in national interest, has to follow procedures established by the law.

Select the correct answer code:

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

Solution: c)

The Court, pointing to its own judgment in K S Puttaswamy, has said that “**right to privacy is as sacrosanct as human existence and is inalienable to human dignity and autonomy**”. While agreeing that it is **not an absolute right**, the Court has said any restrictions “must necessarily pass constitutional scrutiny”.

Any surveillance or snooping done on an individual by the state or any outside agency is an infringement of that person's right to privacy. Hence, any violation of that right by the state, even in national interest, has to follow procedures established by the law.

Source

- 2) Consider the following statements regarding the repealing of a law in India.
1. The Constitution empowers the Parliament to enact as well as to repeal any law.
 2. For repeal, the power of Parliament is the same as enacting a law under the Constitution.
 3. A law cannot be repealed by promulgating an ordinance.

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 the procedure to repeal a law in India?

The law can be repealed by the government in two ways;

- First to bring a Bill to repeal the three laws, and
- Second is to **promulgate an ordinance** that will have to be consequently replaced with a Bill within six months.
- **For repeal, the power of Parliament is the same as enacting a law under the Constitution.**
- **Article 245 of the Indian Constitution empowers the Parliament to enact as well as to repeal any law.**
- That is, the Parliament has the power to make laws and also to repeal them through the Repealing and Amendment Act. In 1950, the first Act was passed and 72 Acts were repealed.
- Like any other Bill, the Repealing and Amendment Bill will pass in the same way as any other Bill. It will **have to be passed by both Houses of Parliament and the President's assent will be required to make it a law.**

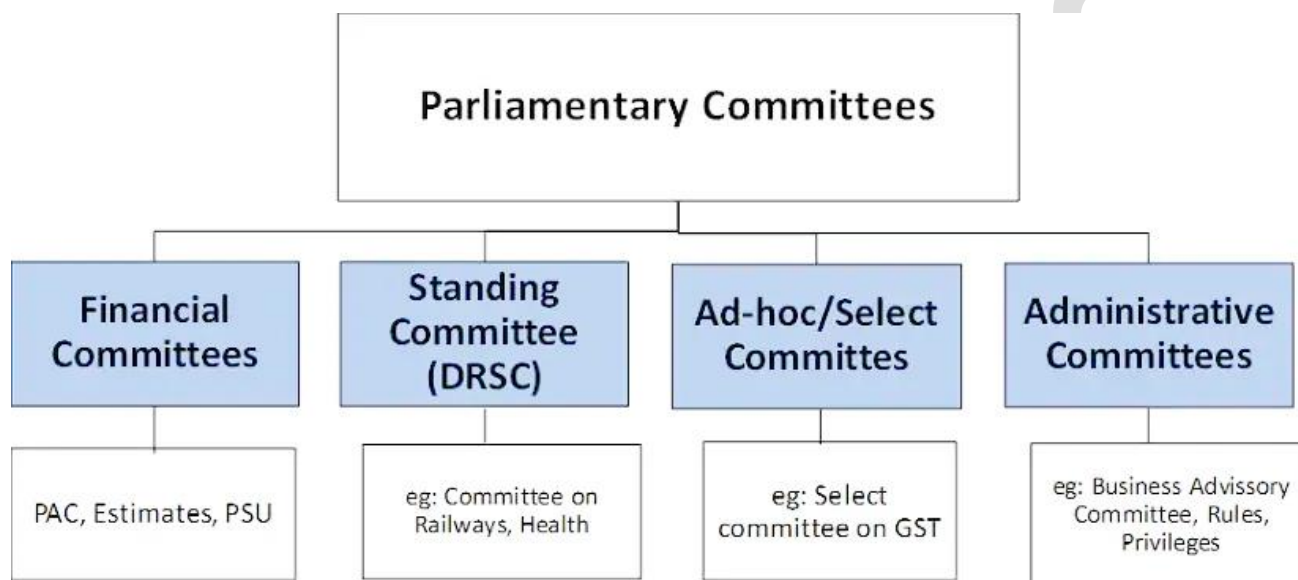
- 3) Which of the following are the different kinds of Parliamentary committees?

1. Financial Committees
2. Standing Committee
3. Ad-hoc / Select Committees
4. Administrative Committees

Select the correct answer code:

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

Solution: d)



- 4) Consider the following statements regarding Union Finance Commission.
1. The Finance commission submits its report to the union Finance minister.
 2. The recommendations made by the Finance Commission are binding on the government.

Which of the statements given above is/are correct?

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

Solution: d)

Article 280 of the Constitution of India provides for a Finance Commission as a quasi-judicial body. It is constituted by the president of India every fifth year or at such earlier time as he considers necessary.

The commission submits its report to the president. He lays it before both the Houses of Parliament along with an explanatory memorandum as to the action taken on its recommendations.

The recommendations made by the Finance Commission are only of advisory nature and hence, not binding on the government. It is up to the Union government to implement its recommendations on granting money to the states.

- 5) Consider the following statements regarding Parliamentary committees.
1. Parliamentary committees act as a mini-parliament as they have MPs representing different parties who are elected through a system of the single transferable vote.
 2. Parliamentary committees ensure executive accountability through scrutiny of public spending.
 3. The committee recommendations are binding on the government.

Which of the above statements is/are correct?

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

Solution: a)

- The Parliamentary committees are established to study and deal with various matters that cannot be directly handled by the legislature due to their volume.
- **These committees act as a mini-parliament, as they have MPs representing different parties are elected into them through a system of the single transferable vote**, in roughly the same proportion as their strength in Parliament.
- They monitor the functioning of the executive branch and provide legislature with various policy input, playing an important role in Indian democracy.
- It **scrutinises the accounts and the report of the Comptroller and Auditor-General of India**, thereby ensuring accountability of any misspending.
- Parliamentary committees **ensure executive accountability through scrutiny of public spending and various laws**.
- The Public Accounts Committee is concerned with the manner and results of spending public funds.
- Although **committee recommendations are not binding on the government**, their reports create a public record of the consultations that took place and put pressure on the government to reconsider its stand on debatable provisions.

6) Consider the following statements.

1. In both the Houses of Parliament, elected members enjoy the right to seek information from various ministries and departments in the form of starred questions and unstarred questions.
2. The admissibility of questions in Rajya Sabha is governed by Rules of Procedure and Conduct of Business in the Council of States.
3. The questions in both the Houses of Parliament cannot be disallowed and is usually passed on to the next session of the Parliament if it cannot be taken up in the ongoing session.

Which of the above statements is/are correct?

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

Solution: b)

In both Houses, elected members enjoy the right to seek information from various ministries and departments in the form of starred questions, unstarred questions, short notice questions and questions to private members.

The admissibility of questions in Rajya Sabha is governed by Rules 47-50 of the **Rules of Procedure and Conduct of Business in the Council of States**.

In Lok Sabha, the questions are examined for admissibility under Rules 41-44 of the Rules of Procedure and Conduct of Business in Lok Sabha.

In both Houses, the first hour of every sitting is usually devoted to asking and answering of questions, and this is referred to as the 'Question Hour'.

The Rajya Sabha Chairman or the Lok Sabha Speaker has the authority to decide whether a question or a part is or is not admissible under the norms of the House, and disallow any question or a part. Once disallowed, it is often difficult for members to challenge the decision.

[Source](#)

7) Currently, Armed Forces Special Powers Act (AFSPA) is in effect in the entire State of

1. Nagaland
2. Assam
3. Manipur
4. Arunachal Pradesh

Select the correct answer code:

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

Solution: a)

Currently, AFSPA is in effect in Jammu and Kashmir, **Nagaland, Assam**, Manipur (excluding seven assembly constituencies of Imphal) and parts of Arunachal Pradesh.

[Source](#)

8) Consider the following statements regarding Armed Forces Special Powers Act (AFSPA).

1. The law is based on the Armed Forces (Special Powers) Ordinance of 1942, which was issued during the Quit India movement.
2. The power to declare a territory “disturbed” lay exclusively with the Central Government.
3. The law can be repealed where insurgencies subside, and the region can be managed using the police force.

Which of the above statements is/are correct?

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

Solution: b)

AFSPA can be implemented in an area after it has been declared as “disturbed”.

The power to declare a territory “disturbed” initially lay with the states, but passed to the Centre in 1972. Section 3 of AFSPA (in J&K) says that an area can be declared disturbed if it is the “opinion of the Governor or the central government” which “makes the use of armed forces in aid of the civil power necessary”.

The law has been repealed where insurgencies have subsided, and when governments have gained confidence of managing the region using the police force. Thus, AFSPA was repealed in Tripura in 2015, and in 2018 the Centre also removed Meghalaya from the list, while also restricting its use in Arunachal Pradesh.

The law is based on the Armed Forces (Special Powers) Ordinance of 1942, which was issued during the Quit India movement.

Enacted by Parliament on September 11, 1958, AFSPA was first implemented in the Northeast, and then in Punjab.

The Jeevan Reddy Committee formed in 2004 had recommended a complete repeal of the law.

[Source](#)

9) Consider the following statements.

1. Article 21-A was inserted in the Constitution of India to provide free and compulsory education to all children in the age group of six to fourteen years.
 2. Article 21A was introduced through a Constitutional Amendment Act, since Article 45 was not realized.
- 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)

Article 45 in Directive Principles of State Policy stated that the government should provide free and compulsory education to all until the age of 14 within 10 years from the commencement of the Constitution.

Since it was not realized, Article 21A was introduced by the 86th Constitutional Amendment Act of 2002.

The Constitution (Eighty-sixth Amendment) Act, 2002 inserted **Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right** in such a manner as the State may, by law, determine.

10) Consider the following statements.

1. According to the Indian Constitution, any petition alleging a breach of fundamental rights by the state ought to be judicially decided within one month.
2. The responsibility for constituting benches and scheduling cases that are due to be heard by larger Benches rests solely with the Chief Justice of India (CJI).

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)

During the framing of the Indian Constitution, it was proposed that any petition alleging a breach of fundamental rights by the state ought to be judicially decided within one month. While the proposal did not, ultimately, find its way into the text of the Constitution.

The responsibility for constituting benches and scheduling cases especially cases that are due to be heard by larger Benches rests solely with the Chief Justice of India (CJI).

Source

11) In the parliament, elected members enjoy the right to seek information from various ministries in the form of starred questions, unstarred questions and short notice questions. In this context, consider the following pairs.

1. Starred question – The member seeks a written answer, which is deemed to be laid on the table of the House by the concerned minister.
2. Unstarred question - The member desires an oral answer from the minister and the answer can be followed by supplementary questions from members.
3. Short notice question – These involve an urgent matter of public importance and a notice of less than 10 days is prescribed as the minimum period for asking such a question.

Which of the above pairs is/are correctly matched?

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

Solution: c)

What are starred, unstarred and other categories of questions?

- **STARRED QUESTION:** The member desires an **oral answer** from the minister. Such a question is distinguished by the MP with an asterisk. The answer can also be followed by supplementary questions from members.
- **UNSTARRED QUESTION:** The MP seeks a **written answer**, which is deemed to be laid on the table of the House by the concerned minister.
- **SHORT NOTICE QUESTION:** These are on an **urgent matter of public importance**, and an **oral answer** is sought. A notice of less than 10 days is prescribed as the minimum period for asking such a question.
- **QUESTION TO PRIVATE MEMBER:** A question can be addressed to a private member under Rule 40 of Lok Sabha's Rules of Procedure, or under Rule 48 of Rajya Sabha's Rules, provided that the question deals with a subject relating to some Bill, resolution or other matter for which that member is responsible.

In both Houses, the first hour of every sitting is usually devoted to asking and answering of questions, and this is referred to as the 'Question Hour'.

[Source](#)

- 12) The Lok Sabha Speaker has the authority to decide whether a question or a part of it is not admissible under the norms of the House, and disallow any question or a part. In Lok Sabha, questions are not admitted when
1. The questions are repetitive or have been answered previously.
 2. The matter is pending for judgment before any court of law.
 3. The matter is under consideration before a Parliamentary Committee.

Select the correct answer code:

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

Solution: d)

In Lok Sabha, questions that are not admitted include: **those that are repetitive or have been answered previously; and matters that are pending for judgment before any court of law or under consideration before a Parliamentary Committee.**

[Source](#)

13) Consider the following statements.

1. It requires presidential assent for states notifying changes to OBC categories.
2. According to Indra Sawhney judgement, under no circumstances the Centre can exceed 50 percent limit on reservations.

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 *Indra Sawhney vs Union of India*— also known as the Mandal verdict — capped reservations at 50 percent.

The judgment also laid down that the extent of reservation should not cross the 50 percent limit, unless a special case was made out for extraordinary situations and peculiar conditions to relax the rule.

Article 342A introduced by the 102nd Constitution Amendment Act (2018), requires presidential (Centre's) assent for states notifying changes to OBC categories.

14) Consider the following statements.

1. Nominated members of the Rajya Sabha have the same rights and privileges as elected members of Rajya Sabha with the right to vote in the election of the President.
2. The Nominated members of the Rajya Sabha are subjected to disqualification, if they join a political party within six months of being nominated to the House.

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)

Only elected members of both Houses of Parliament and of the State Legislative Assemblies are members of the Electoral College for Presidential Election. Therefore, **nominated members cannot vote in this election.**

In 1985 the Tenth Schedule, popularly known as the anti-defection law, was added to the Constitution.

The law specifies the circumstances under which changing of political parties by MPs invite action under the law. The law covers three types of scenarios with respect to an MP switching parties. The first is when a member elected on the ticket of a political party "voluntarily gives up" membership of such a party or votes in the House contrary to the wishes of the party. The second possibility is when an MP who has won his or her seat as an independent candidate after the election joins a political party. In both these instances, the MP lose the seat in the House on changing (or joining) a party.

The third scenario relates to nominated MPs. In their case, the law specifies that **within six months of being nominated to the House, they can choose to join a political party.**

15) Consider the following statements regarding Privilege motion.

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

Which of the above statements is/are correct?

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

Solution: c)

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 chairman is the first level of scrutiny of a privilege motion.** The Speaker/Chairman can decide on the privilege motion himself or herself or refer it to the privileges committee of Parliament.

16) Consider the following statements.

1. State Governments have absolute power to keep the Central Bureau of Investigation (CBI) from investigating crimes inside the State.

2. CBI can probe cases concerning any of the Central subjects enumerated in the Union List in the Seventh Schedule of the Constitution.

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)

The Union Government told the Supreme Court that the government in West Bengal does not have any “absolute” power to keep the Central Bureau of Investigation (CBI) from investigating crimes inside the State.

The CBI was empowered to probe cases concerning any of the Central subjects enumerated in the Union List in the Seventh Schedule of the Constitution.

Source

17) 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.

18) Consider the following statements regarding the administration of Union Territories.

- 1. Every union territory is administered by the President acting through an administrator appointed by him.
- 2. An administrator of a union territory is an agent of the President and head of state like a governor.

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)

Under Article 1 of the Constitution, the territory of India comprises three categories of territories: (a) territories of the states; (b) union territories; and (c) territories that may be acquired by the Government of India at any time.

Every union territory is administered by the President acting through an administrator appointed by him.

An administrator of a union territory is an agent of the President and not head of state like a governor. The President can specify the designation of an administrator; it may be Lieutenant Governor or Chief Commissioner or Administrator.

19) Consider the following statements regarding Anti-defection provisions.

1. Legislators in no circumstances can change their party without the risk of disqualification.
2. The provisions allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.

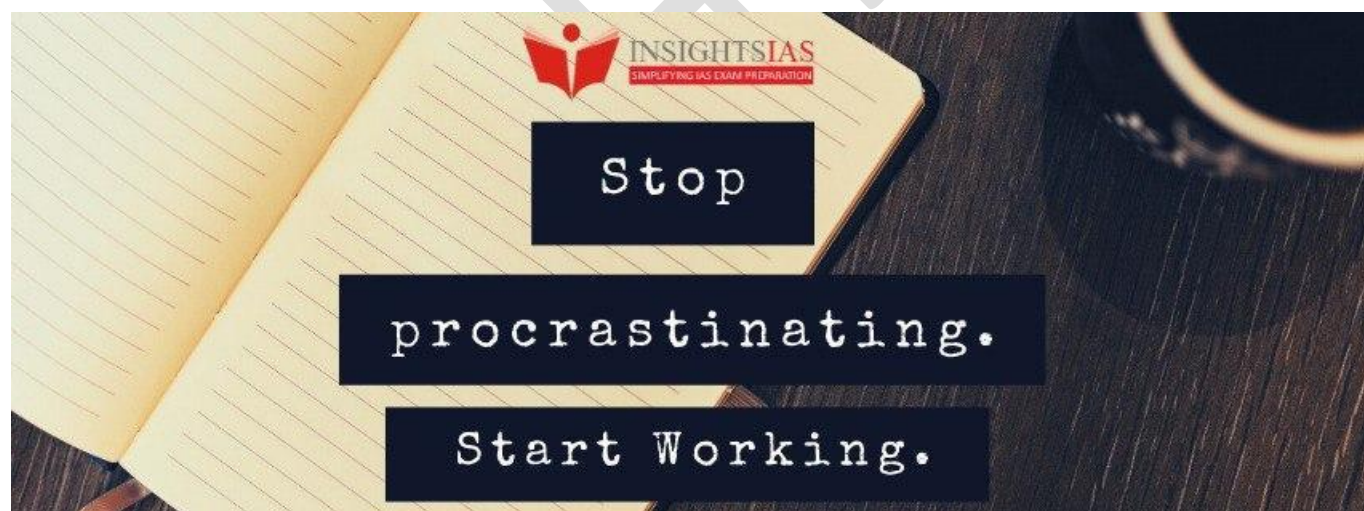
Which of the above statements is/are incorrect?

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

Solution: a)

Exceptions under the law:

- **Legislators may change their party without the risk of disqualification in certain circumstances.**
- **The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.**
- In such a scenario, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.



8. History, Art and Culture

- 1) Which of the following were primarily related to the Indian education system during the colonial period?
1. Macaulay minute
 2. Wood's dispatch
 3. Simon commission
 4. Sadler commission

Select the correct answer code:

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

Solution: c)

From **Macaulay minute** to **Wood's dispatch** to several commissions like **Sadler commission**, 1904 Indian education policy etc., has built the foundation for the Indian education system during the colonial period.

- 2) Consider the following statements.
1. Goa came under Portugal rule when the major part of India was ruled by the Mughals.
 2. 'Operation Vijay' was the military action by which India liberated the territories of Goa, Daman and Diu from Portuguese rule.
 3. Goa was liberated from Portuguese rule soon after India's Independence.

Which of the above statements is/are correct?

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

Solution: b)

'Operation Vijay' — the military action in 1961 by which India liberated the territories of Goa, Daman and Diu from Portuguese rule.

Goa came under Portugal rule when the major part of the country was ruled by the Mughals.

Source

- 3) Consider the following statements.
1. The Red Fort was built during the reign of Shah Jahan in the mid-seventeenth century.
 2. Akbar was the last Mughal emperor to occupy the Red fort.
 3. The Red Fort was designated a UNESCO World Heritage Site as part of the Red Fort Complex.

Which of the above statements is/are correct?

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

Solution: b)

The Red Fort was built during the reign of Shah Jahan in the mid-seventeenth century.

The Red Fort was designated a **UNESCO World Heritage Site** in 2007 as part of the Red Fort Complex.

Bahadur Shah Zafar or **Bahadur Shah II** was the twentieth and **last Mughal Emperor of India**. The last Mughal emperor to occupy the fort, Bahadur Shah II, became a symbol of the 1857 rebellion against the British East India Company.

[Source](#)

4) Recently Prime minister Narendra Modi inaugurated the Kushinagar International Airport in Uttar Pradesh. Consider the following statements regarding Kushinagar.

1. It is an important Buddhist pilgrimage site, where it is believed that Gautam Buddha delivered his *last sermon*.
2. The present Kushinagar is identified with Kushinara, the capital of Mallas which was one of the sixteen mahajanpads of the 6th century BCE.
3. Kushinagar is among the few places in India where Buddha is depicted in reclining form.

Which of the above statements is/are correct?

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

Solution: c)

Kushinagar is a town in the Kushinagar district of the Indian state of Uttar Pradesh. It is an important Buddhist pilgrimage site, where Buddhists believe **Gautam Buddha attained Mahaparinirvana after his death**.

The present Kushinagar is identified with Kusavati (in the pre-Buddha period) and **Kushinara (in the post-Buddha period)**. **Kushinara was the capital of Mallas which was one of the sixteen mahajanpads of the 6th century BCE.**

Kushinagar is among the few places in India where **Buddha is depicted in reclining form**.

Buddha delivered his last sermon at Vaishali.

[Source](#)

5) Kangri, a traditional heater comprising earthenware in a wicker basket, has been mainly used in

- a) New Delhi
- b) Nagaland
- c) Jammu and Kashmir
- d) Kerala

Solution: c)

Kangris: A traditional portable and movable heater that Kashmiris keep in their warm woollen cloak to keep themselves warm in the frosty winters.



[Source](#)

6) Consider the following statements regarding Sattras of Assam.

1. Sattras are monastic institutions created as part of the 16th century Neo-Vaishnavite reformist movement started by Vaishnavite saint-reformer Srimanta Sankaradeva.
2. During the Ahom reign, most of the Sattras across Assam were destroyed.
3. These Sattras were established as centres of religious, social and cultural reforms.

Which of the above statements is/are correct?

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

Solution: b)

Sattras are monastic institutions created as part of the 16th century Neo-Vaishnavite reformist movement started by Vaishnavite saint-reformer Srimanta Sankaradeva (1449-1596). As the saint travelled across Assam, spreading his teachings and propagating an egalitarian society, these Sattras/Thans were established as **centres of religious, social and cultural reforms** in the 16th century. Today, Sattras are spread across the state, promulgating Sankaradeva's unique "worship through art" approach with music (borgeet), dance (xattriya) and theatre (bhauna).

During the Ahom reign, the Sattras received a lot of donations in the form of land or money from the kings.

9. Agriculture

1) Consider the following statements.

1. The Central Government sets a minimum support price (MSP) for various crops every year based on a formula that takes into account both paid-out costs (A2) such as seeds, fertilizers and pesticides as well as the imputed value of unpaid family labour (FL).

2. There is currently no statutory backing for the MSP, nor any law mandates their enforcement.

3. The Central Government procures almost all the wheat and rice crops throughout the country at MSP rates.

Which of the above statements is/are correct?

a) 1 only

b) 1, 2

c) 1, 3

d) 1, 2, 3

Solution: b)

The Central Government sets a minimum support price (MSP) for 23 crops every year, based on a formula of one-and-a-half times production costs. This takes into account both paid-out costs (A2) such as seeds, fertilizers, pesticides, fuel, irrigation, hired workers and leased-in land, as well as the imputed value of unpaid family labour (FL). Farm unions are demanding that a comprehensive cost calculation (C2) must also include capital assets and the rentals and interest forgone on owned land as recommended by the National Commission for Farmers.

There is **currently no statutory backing for these prices, nor any law mandating their enforcement.** The **government only procures about a third of wheat and rice crops at MSP rates** (of which half is bought in Punjab and Haryana alone), and 10%-20% of select pulses and oilseeds.

Source

2) How can the Government ensure that the food crops are procured at the guaranteed minimum support price (MSP)?

1. Forcing private traders or processors to pay MSP.

2. Government undertaking procurement at MSP through its agencies such as the Food Corporation of India (FCI).

3. Price deficiency payments.

Select the correct answer code:

a) 1, 2

b) 1, 3

c) 2, 3

d) 1, 2, 3

Solution: d)

The unions want the government to enact legislation conferring mandatory status to MSP, rather than just being an indicative or desired price.

How can that entitlement be implemented?

There are basically three ways.

- The first is by **forcing private traders or processors to pay MSP**. This is already applicable in sugarcane.
- The second is **by the government undertaking procurement at MSP** through its agencies such as the Food Corporation of India (FCI), National Agricultural Cooperative Marketing Federation of India (Nafed) and Cotton Corporation of India (CCI).
- The third route for **guaranteeing MSP is via price deficiency payments**.

- Under it, the government neither directly purchases nor forces the private industry to pay MSP.
- Instead, it allows all sales by farmers to take place at the prevailing market prices.
- Farmers are simply paid the difference between the government's MSP and the average market price for the particular crop during the harvesting season.

Source

- 3) Consider the following statements regarding Precision agriculture.
1. Precision agriculture is the 'right-input' at the 'right-time' in the 'right-amount' at the 'right-place' and in the 'right-manner' for improving agricultural productivity and conserving natural resources.
 2. Precision agriculture requires huge amounts of Environmental data collation through technological intervention for better farming techniques.
- 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)

Precision agriculture is basically the 'right-input' at the 'right-time' in the 'right-amount' at the 'right-place' and in the 'right-manner' for improving productivity, conserving natural resources and avoiding any ecological or social tribulations.

Today, precision agriculture is harnessing the power of artificial intelligence (AI). IoT, satellite imagery, drones, Web-GIS frameworks, Big Data, cloud and machine learning are expected to improve global agricultural productivity in the near future.

But to arrive at these desired results, **huge amounts of data collation is required**. Environmental data, through technological intervention, has already fuelled better farming techniques in developed countries.

Sensors and analysis tools can boost crop yield. In order to do this, environmental data is collected in the geospatial format to measure quantifiable variables like weather, soil moisture, volumetric soil temperature, fertiliser rates, water run-off, agrochemicals movement and rain.

[Source](#)

- 4) Arrange the following kharif crops in the decreasing order in terms of area under cultivation.
1. Rice
 2. Oilseeds
 3. Pulses
 4. Sugarcane

Select the correct answer code:

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

Solution: c)

Sowing Area Coverage of Kharif Crops : as on 31.07.2020, the total Kharif crops has been sown on 882.18 lakh ha area against 774.38 lakh ha area during the corresponding period of last year.

Rice: About 266.60 lakh ha area coverage

Oilseeds: About 175.34 lakh ha area coverage

Pulses: About 111.91 lakh ha area coverage

Sugarcane: About 51.78 lakh ha area coverage

[Source](#)

5) Which of the following are the benefits of using Bio-enzymes on agricultural land?

1. Improves the pH level and soil fertility
2. Acts as pest repellent
3. Improves the photosynthesis process of the crops

Select the correct answer code:

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

Solution: d)

Farmers are using the waste kinnow fruit to **improve the pH level and soil fertility** of their land by making Bio-enzymes from this waste fruit.

Spraying Bio-enzymes works as **pest repellent** and also **improves the photosynthesis process of the crops**.

[Source](#)



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10. Defence and Security

- 1) Consider the following statements regarding 'Zero-click' attacks.
1. Zero-click attack is a cyberattack that do not require any action by the user to hack his/her device.
 2. Hacking a device by giving a missed WhatsApp call is a type of Zero-click attack.
 3. Pegasus's method of attack is an example for 'Zero-click' attacks.

Which of the above statements is/are correct?

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

Solution: d)

Decoding Pegasus

Pegasus is a spyware, developed and licensed by an Israeli company, NSO Group. It can be used to infiltrate smartphones that run on both iOS and Android operating systems, and turn them into surveillance devices. A low down:

- Pegasus's method of attack is called zero-click attacks, which do not require any action by the user. The spyware can hack a device simply by giving a **missed WhatsApp call**

- It will **alter call logs** so that the user has no knowledge of what happened

- It can also be **installed manually** on a device or over a wireless transceiver

- If it fails to connect with its command-and-control server for more than 60 days, it **self-destructs and removes all traces**

- If it detects that it was installed on the wrong device or SIM card, it will **self-destruct**

- Amnesty International noted that despite issuing security updates, Android and **iOS devices were breached**

- **Once the spyware enters the device, it installs a module to track call logs, read messages, emails, calendars, Internet history, and gather location data to send the information to the attacker**



- To stay safe, users need to ensure that software in devices is updated and all apps are installed directly through the official stores. **No suspicious email or text should be clicked**

- 2) The coast guard exercise 'Dosti', recently seen in news was held between
1. India
 2. Maldives
 3. Sri Lanka

Select the correct answer code:

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

Solution: d)

The 15th edition of the biennial trilateral coast guard exercise '**Dosti**' involving **India, the Maldives and Sri Lanka** was held in the Maldives. 2021 marks 30 years since these exercises were first launched.

[Source](#)

- 3) Hague Code of Conduct (HCOC), sometimes seen in news, is related to
- Prohibition of the usage of biological weapons
 - Prevention of the proliferation of ballistic missiles
 - Code of Conduct for civil servants working for United Nations
 - Guidelines for International travel*

Solution: b)

The **International Code of Conduct against Ballistic Missile Proliferation, also known as the Hague Code of Conduct (HCOC)**, was established on 25 November 2002 as an arrangement to prevent the proliferation of ballistic missiles.

- 4) Consider the following statements.
- At the time of Independence, India had advanced indigenous missile capabilities.
 - Project Devil was related to the development of a medium range Surface-to-Surface Missile.

Which of the above statements is/are correct?

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

Solution: b)

Before Independence, several kingdoms in India were using rockets as part of their warfare technologies. Mysore ruler Hyder Ali started inducting iron-cased rockets in his army in the mid-18th century. By the time Hyder's son Tipu Sultan died, a company of rocketeers was attached to each brigade of his army, which has been estimated at around 5,000 rocket-carrying troops.

At the time of Independence, India did not have any indigenous missile capabilities. The government created the Special Weapon Development Team in 1958. This was later expanded and called the Defence Research and Development Laboratory (DRDL), which moved from Delhi to Hyderabad by 1962.

In 1972, Project Devil, for the development of a medium range Surface-to-Surface Missile was initiated.

[Source](#)

- 5) Consider the following pairs regarding India's missile system.
- Nag : Anti-Tank Guided missile
 - Akash : Surface to air missile
 - Astra : New Generation Anti-Radiation Missile
 - Rudram : Beyond Visual Range Air-to-Air Missile

Which of the above pairs is/are correctly matched?

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

Solution: b)

ANTI-TANK GUIDED MISSILE: Nag has already been inducted into the services. Nag is the only "fire-and-forget ATGM meeting all weather requirements for its range (around 20 km)".

SURFACE-TO-AIR MISSILE: The short-range SAM system **Akash** has already been inducted in the Army and the Air Force.

AIR-TO-AIR: **Astra**, India's **Beyond Visual Range Air-to-Air Missile (BVRAAM)**, has been completely tested and is under induction. It has a range of around 100 km.

AIR-TO-GROUND: **Rudram**, a **New Generation Anti-Radiation Missile (NGRAM)**. With a maximum range of around 200 km, the missile mainly targets communication, radar and surveillance systems of the adversary.

Source



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11. Reports and Indices

- 1) The National Health Accounts (NHA) report capture spending on health by various sources which include
1. Out-of-pocket expenditure
 2. Public spending on health by various departments of the Union and State governments.
 3. Insurance premiums and expenditure estimates from non-governmental organisations.
 4. Capital expenditure on health infrastructure by the State.

Select the correct answer code:

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

Solution: d)

Out-of-pocket expenditure, the biggest part of NHA estimates is captured using "Household Social Consumption in India: Health" survey of National Sample Survey Organisation. **Public spending on health by various departments of the Union and State governments**, major urban local bodies, and social security schemes are captured from Budgets. Various sources are also used to capture **insurance premiums, expenditure estimates from firms, non-governmental organisations** and foreign entities.

Various sources are also used to capture insurance premiums, expenditure estimates from firms, non-governmental organisations and foreign entities.

In NHA estimates in India, in order to show higher **public investment**, capital expenditure is included.

Source

- 2) Consider the following statements regarding Global Multidimensional Poverty Index (MPI).
1. Global Multidimensional Poverty Index (MPI) is developed by World Bank.
 2. It uses health, education and standard of living indicators to determine the incidence and intensity of poverty experienced by a population.
 3. Here each indicator is given an equal weightage.

Which of the above statements is/are correct?

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

Solution: c)

The **Global Multidimensional Poverty Index (MPI)** was developed in 2010 by the **Oxford Poverty & Human Development Initiative (OPHI)** and the **United Nations Development Programme** and uses **health, education and standard of living indicators to determine the incidence and intensity of poverty experienced by a population.**

Each dimension (health, education, standard of living, etc.) is typically given an equal weighting, and each indicator within the dimension is also typically weighted equally.

- 3) Consider the following statements.
1. The female share of the total labour income is the national aggregate labour income earned by women relative to the total aggregate of labour income within a country.
 2. In a country with perfect equality between women and men, the female labour income share would be equal to 50%.

3. According to World Inequality Report 2022, women's share of total labour income in India is almost equal to 50 percent.

Which of the above statements is/are correct?

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

Solution: a)

Men in India capture 82% of labour income, while women earn just 18%, according to the first-ever estimates of the gender inequality in global earnings presented in the **World Inequality Report 2022**.

The female share of the total labour income is the national aggregate labour income earned by women relative to the total aggregate of labour income within a country. In a country with perfect equality between women and men, the female labour income share would be equal to 50%.

Female labour income in India of 18.3% is lower than the average for Asia, which was at 27% in 2019.

Source

4) Consider the following statements regarding Purchasing Managers' Index (PMI).

1. Purchasing Managers' Index is an economic indicator that is calculated from monthly surveys of purchasing managers and supply executives from specific companies.
2. It is applicable only for manufacturing and not for services sector.
3. A figure above 50 denotes an expansion while anything below 50 denotes a contraction in activity.

Which of the above statements is/are correct?

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

Solution: c)

It is an economic indicator that is calculated from monthly surveys of purchasing managers and supply executives from specific companies. PMI Manufacturing gives an indication of the economic health of the manufacturing sector. The most followed PMI readings come from Markit and Institute of Supply Management.

It is calculated separately for the manufacturing and services sectors and then a composite index too is constructed.

A figure above 50 denotes an expansion while anything below 50 denotes a contraction in activity. The higher the difference from this mid-point of 50, greater the expansion or contraction.

1) Consider the following statements regarding the percentage of children aged 6-59 months who are anaemic according to National Family Health Survey-5.

1. North-eastern states had the highest percentage of children in India, who were anaemic.
2. Kerala was the only state where the share was less than 40%.

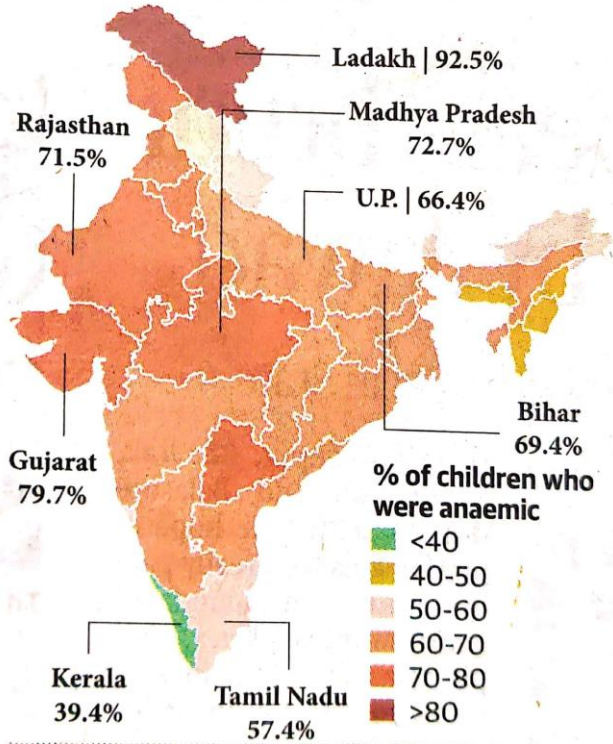
Which of the above statements is/are correct?

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

Solution: b)

State-wise prevalence

The map shows the State-wise percentage of children aged 6-59 months who were anaemic, according to NFHS-5. The share of anaemic children was more than 70% in nine out of the 36 States/UTs. Kerala was the only State where the share was less than 40%



12. Maps / Places

- 1) Irish Sea is located between
- Great Britain and France
 - Sweden and Finland
 - Great Britain and Norway
 - Ireland and Great Britain

Solution: d)

The **Irish Sea** separates the islands of **Ireland and Great Britain**.



- 2) Consider the following statements.
- Ukraine is a landlocked country located in the Eastern Europe.
 - Some of the countries bordering Ukraine are Russia, Belarus, Poland and Romania.

Which of the above statements is/are correct?

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

Solution: b)



- 3) Mount Manipur, recently seen in news is located in
- Manipur
 - Mizoram
 - Andaman and Nicobar Islands
 - Lakshadweep

Solution: c)

The Union government **rechristened Mount Harriet**, a historical tourist spot in the **Andaman and Nicobar Islands**, as **'Mount Manipur'**.

After the Anglo-Manipur War of 1891, several Manipuris who had fought the British in the war, including Maharaja Kulachandra Dhwaja Singh, were exiled to the British penal colony in the Andaman Islands. Since the cellular jail (Kalapani) was yet to be built, Kulachandra and the prisoners were kept on Mount Harriet, a hillock in what is now the Ferragunj tehsil of South Andaman district.

[Source](#)



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