All India Civil Services Coaching Centre

(Under the aegis of Government of Tamil Nadu)

General Studies – Paper - I

Answer Key Explanation

Maximum Questions: 100 **Maximum Marks: 200**

1. Ans. (d)

- Option D is correct : India and the majority of the members of OECD-G20
- Inclusive Framework on Base Erosion and Profit Shifting (BEPS) have joined a new two-pillar plan to reform international taxation rules.
- The two-pillar plan - inclusive framework tax deal on Base Erosion and Profit Shifting (BEPS)- seeks to reform international tax rules and ensure that multinational enterprises pay their fair share wherever they operate.
- The signatories of the plan amounted to 130 countries and jurisdictions, representing more than 90% of global GDP.
- The new framework seeks to address the tax challenges arising from the digitalisation of economies.
- It also seeks to address concerns over cross-border profit shifting and bring in subject-to-tax rule to stop treaty shopping.
- Treaty shopping is an attempt by a person to indirectly access the benefits of a tax treaty between two countries without being a resident of any of those.
- Two Pillar Plan: Pillar One: It will ensure a fairer distribution of profits and taxing rights among countries with respect to the largest MNEs, including digital companies.
- It would re-allocate some taxing rights over MNEs from their home countries to the markets where they have business activities and earn profits, regardless of whether firms have a physical presence there.
- According to OECD, more than USD 100 billion of profit are expected to be reallocated to market jurisdictions each year.
- Pillar Two: It is about minimum tax and subject-to-tax rules (All sources of income liable to tax without taking account of tax allowances).
- It seeks to put a minimum standard tax rate among countries through a global minimum corporate tax rate, currently proposed at 15%.
- This is expected to generate an additional USD 150 billion in tax revenues.

2. Ans. (c)

- The decision to allow international trade in rupees is aimed at easing trade with Sri Lanka, which is running low on forex reserves, and Russia, which cannot make payments in US dollars due to sanctions by the West.
- To accept payments in rupees, authorized dealer banks will be able to open special Rupee Vostro accounts.
- A Rupee Vostro account is a foreign bank's account with an Indian bank in rupees in India.
- This move will help reduce India's dependency on US dollars.
- The recent Ukraine-Russia crisis and sanctions on Russia was a real eye opener

for most countries who are now trying to lower their dependency on the US dollar.

- Moreover, since India runs a trade deficit – its imports are greater than exports – settling trades in rupees will also save dollar outflows.
- At a time when the rupee's value is declining every week against the US dollar, saving dollar outflows becomes even more critical for the RBI.
- Several countries including Sri Lanka and some in Africa and Latin America are facing forex shortage.
- As such, the new mechanism will help India promote its exports.
- The move would also reduce the risk of forex fluctuation specially looking at the Euro-rupee parity.
- It will also help stabilize the rupee.It will also help buy discounted crude oil from Russia, which now accounts for 10% of all imported crude.
- RBI's decision may not benefit the external account immediately, but over the medium term, demand for dollars may come down and this move will help narrow the trade deficit.
- It will slow down the depreciation of the rupee as it will promote the growth of global trade with emphasis on exports from India and to support the increasing interest of the global trading community in INR.
- Amid ongoing rupee weakness, this mechanism aims at reducing demand for foreign exchange, by promoting rupee settlement of trade flows.
- Since India imports more than it exports. It will enhance forex inflows and as a step to stabilize the rupee.

3. Ans. (c)

- Recently, a sharp and sudden spike in fuel prices triggered a national crisis in Kazakhstan
- Statement 1 is incorrect: Sandwiched between Russia and China, Kazakhstan is the world's largest landlocked country, bigger than the whole of Western Europe.
- Statement 2 is correct: It has vast mineral resources, with 3% of global oil reserves and important coal and gas sectors. It is the top global producer of uranium, which jumped in price by 8% after the unrest. The country is also the world's second-largest miner of bitcoin.
- Statement 3 is correct: Recently there was unrest in Kazakhstan due to rising fuel prices.
- Angry Kazakhs first took to the streets after fuel prices doubled in the oil-rich Central Asian nation when the government lifted price caps for Liquified Petroleum Gas (LPG), commonly used in vehicles.
- Protesters demanded the resignation of the government and lowering of LPG prices.

4. Ans. (d)

- Pair 1 is incorrectly matched: Ur Settlements of Peasants
- Pair 2 is incorrectly matched: Nadus – Group of Villages
- Pair 3 is incorrectly matched: Nagarams – Association of Traders
- Administration of Chola kingdom Settlements of peasants, known as ur, became prosperous with the spread of irrigation agriculture.

5. Ans. (d)

- Option (d) is correct

Causes of Origin of Buddhism and Jainism

Complex rituals and sacrifices advocated in later Vedic period:

- The primary cause for the rise of Jainism and Buddhism was the religious unrest in India in the 6th century B.C.

- The complex rituals and sacrifices advocated in the Later Vedic period were not acceptable to the common people.
- The sacrificial ceremonies were also found to be too expensive.
- The superstitious beliefs and mantras confused the people.
- The teachings of Upanishads, an alternative to the system of sacrifices, were highly philosophical in nature and therefore not easily understood by all.

Prevalence of rigid caste system:

- Brahmanas, Kshatriyas, Vaishyas and Shudras.
- Each Varna was assigned well- defined functions which generated tensions.
- The Kshatriya reaction against the domination of the Brahmanas, who claimed various privileges, was one of the causes of the origin of new religions.
- Vardhamana Mahavira, who founded Jainism, and Gautama Buddha, who founded Buddhism, belonged to the Kshatriya clan, and both disputed the authority of the Brahmanas.
- Spread of a new agricultural economy in north-eastern India including eastern U.P. and Bihar also led to rise of new religions.
- The agricultural economy based on the iron ploughshare required the use of bullocks, and could not flourish without animal husbandry.
- However, the Vedic practice of killing cattle indiscriminately in sacrifices hampered the progress of the new agriculture.
- Rise of a large number of cities in northeastern India like Kaushambi, Kusinagar, Vaishali etc. facilitated trade and commerce which added to the importance of Vaishyas.
- Naturally, they sought a religion that would improve their position.
- Jainism and Buddhism at the initial stage did not attach any importance to the existing Varna system.
- They preached the gospel of non-violence, which would put an end to wars between different kingdoms and consequently promote trade and commerce.
- The Brahmanical law-books, called the Dharmasutras, decried lending money at an interest, and condemned those who lived on interest.
- Therefore, the vaishyas, who lent money because of the growing trade and commerce, were held in low esteem and looked for better social status.
- Both Jainism and Buddhism propounded simple, puritan, ascetic living which appealed to the old-fashioned people who did not like the use and accumulation of coins, new dwellings and clothes, new luxurious systems of transport, war and violence etc.
- The Kshatriyas had resented the domination of the priestly class.
- It should also to be noted that both Buddha and Mahavira belonged to Kshatriya origin.

6. Ans. (c)

- Statement 1 is not correct : INS Vishakhpatnam state-of-the-art stealth guided missile destroyers, being built at the Mazgaon Docks Limited was delivered to the Indian Navy.
- The Visakhapatnam class (Project 15B) is a class of stealth guided missile destroyers under construction.
- INS Visakhapatnam was constructed using indigenous steel DMR 249A.
- It is among the largest destroyers made in the country and has an overall length of 163 metre and displacement of over 7,400 tonne.
- The ship is capable of undertaking multifarious tasks and missions spanning the full spectrum of maritime warfare.

- INS Visakhapatnam is equipped with major indigenous weapons such as indigenous medium range surface to air missile systems, surface to surface missiles, torpedo tubes and launchers.
- It also has medium and short-range guns, anti-submarine rockets and advanced electronic warfare and communication suits.
- Statement 2 is not correct : INS Vishakpatnam was built under Project 15B which envisages to build a total of four warships namely Visakhapatnam, Mormugao, Imphal and Surat.
- The contract for construction of these four ships was signed in 2011.
- These ships are amongst the most technologically advanced Guided Missile Destroyers of the world, with state-of-the art weapon/sensor package, advanced stealth features and a high degree of automation.
- Statement 3 is correct : Destroyers like the P-15B class shall play an important role in the larger oceans of the Indo-Pacific, making the Indian Navy a potent force.
- The guided missile Destroyers are deployed for various responsibilities like escort duties with the Carrier Battle Group to protect the Naval fleet against any air, surface and underwater threats.
- The destroyer is equipped to fight under Nuclear, Biological and Chemical warfare conditions.
- Reference : https://indianexpress.com/article/cities/mumbai/indian-navy-receives-first-destroyer of-project-15b-7599987/

7. Ans. (b)

- Statement 1 is not correct : A lithium-ion battery is a family of rechargeable battery types and consists four components in lithium-ion cell: anode, cathode, separator, and the aqueous electrolyte.
- The energy density of lithium-ion cells used in today's mobile phones and electric vehicles is nearly four times higher than that of older-generation nickel-cadmium batteries.
- Despite improvements in technology over the last decade, issues such as long charging times and weak energy density persist.
- Statement 2 is correct : Nickel-cadmium batteries are prone to memory effect that accumulate crystal from cell that can cause a battery to lose electrical storage area, while Lithium-ion batteries are not.
- Memory effect, also known as battery effect, lazy battery effect, or battery memory, is an effect observed in nickel cadmium rechargeable batteries that causes them to hold less charge.
- It describes the situation in which nickel cadmium batteries gradually lose their maximum energy capacity if they are repeatedly recharged after being only partially discharged.
- The battery appears to "remember" the smaller capacity.
- Statement 3 is correct : Both types of batteries have relatively high shelf lives.
- Nickel-cadmium batteries can be stored or used for up to 5 years.
- Lithium-ion batteries can last for anywhere between 2 and 3 years.
- Reference: https://timesofindia.indiatimes.com/blogs/voices/how-lithium-batteries-are-the-future of-india/

8. Ans. (b)

- Statement 1 is correct: Quantum Key Distribution (QKD) : It is a secure communication technology that uses quantum physics to construct a cryptographic protocol.
- It allows two parties to generate a shared secret key that is only known to them and can be used to encrypt and decrypt

messages, thus achieving a very highly secure communication.

- In traditional cryptography, the security is usually based on the fact that an adversary is unable to solve a certain mathematical problem while in QKD, security is achieved through the laws of quantum physics.
- Two such most important laws in quantum physics are Superposition and Entanglement.
- Statement 2 is not correct: The conventional cryptosystems used for data-encryption rely on the complexity of mathematical algorithms, whereas the security offered by quantum communication is based on the laws of Physics.
- Therefore, quantum cryptography is considered as 'future-proof', since no future advancements in computational power can break quantum-cryptosystem
- Statement 3 is not correct: The government announced a National Mission on Quantum Technologies & Applications (NM-QTA) with a total budget outlay of Rs 8000 Crore for a period of five years to be implemented by the Department of Science & Technology (DST).
- Reference : https://www.thehindubusinessline.com/news/india-joins-elite-club-with-army-set-topossess-indigenous-secured-quantumcommunicationtechnology/article65768443.ece

9. Ans. (b)

- Statement 1 is incorrect: Feldspar is present in more than half of the earth's crust, while Pyroxene forms 10% of the earth's crust.

Feldspar

- Silicon and oxygen are common elements in all types of feldspar and sodium, potassium, calcium, aluminium, etc. are found in specific feldspar variety.
- Around 60% of the earth's crust is composed of feldspar. It has light cream to salmon pink colour.
- Feldspar is used in ceramics and glassmaking.

Pyroxene

- It consists of calcium, aluminium, magnesium, iron, and silica.
- Pyroxene forms 10 percent of the earth's crust.
- It is commonly found in meteorites. It is green or black in colour.

10. Ans. (d)

- Option (d) is correct

Physical Weathering Processes

- Physical or mechanical weathering processes depend on applied forces. The applied forces could be:
- Gravitational forces such as overburden pressure, load and shearing stress; Expansion forces due to temperature changes, crystal growth or animal activity Water pressures controlled by wetting and drying cycles.
- Many of these forces are applied both at the surface and within different earth materials leading to rock fracture.
- Most of the physical weathering processes are caused by thermal expansion and pressure release.
- These processes are small and slow but can cause great damage to the rocks because of continued fatigue the rocks suffer due to repetition of contraction and expansion.

11. Ans. (c)

- Option (c) is correct

Laterite Soil

- Laterite has been derived from the Latin word 'Later' which means brick.

- The laterite soils develop in areas with high temperatures and high rainfall.
- These are the result of intense leaching due to tropical rain.
- With rain, lime and silica are leached away, and soils rich in iron oxide and aluminum compounds are left behind.
- Humus content of the soil is removed fast by bacteria that thrive well in high temperatures.
- These soils are poor in organic matter, nitrogen, phosphate, and calcium, while iron oxide and potash are in excess.
- Hence, laterites are not suitable for cultivation; however, the application of manures and fertilizers are required for making the soil fertile for cultivation.
- Red laterite soils in Tamil Nadu, Andhra Pradesh, and Kerala are more suitable for tree crops like cashew nuts.
- Laterite soils are widely cut as bricks for use in house construction.
- These soils have mainly developed in the higher areas of the peninsular plateau.
- The laterite soils are commonly found in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh and the hilly areas of Odisha and Assam.

12. Ans. (d)

- Neonicotinoids are a class of synthetic neuro-toxic chemicals that are structurally similar to Nicotine, a powerful natural insecticide which is harmful to mammals.
- They are a family of compounds, with the three most commonly used being Imidacloprid, Thiamethoxam, and Clothianidin.
- Neonicotinoids are the most important new class of synthetic insecticides used in plant and animal health over the last decade to control sucking insects. So, statement 1 is correct.
- Neonicotinoids are water-soluble, and can be absorbed by plants and distributed through their tissues.
- When insects ingest them, they bind to and block nicotinic receptors for the neurotransmitter acetylcholine in the central nervous system of insects, which leads to paralysis and eventual death for the insects. So, statement 2 is correct.
- In a research study it was found that toxic agricultural runoff so concentrated with imidacloprid is leading to 70-per-cent less aquatic invertebrate species richness and abundance.
- Neonicotinoids have been a major cause of the decline of bees and other pollinators.
- As bees, hoverflies, butterflies, moths, beetles and other pollinators feed from the flowers of treated crops, they are able to absorb enough of the insecticide to compromise their survival. So, statement 2 is correct.
- Therefore, option (d) is the correct answer.
- **Relevance:** The United States has decided to allow the use of Neonicotinoids which are devastating chemicals to bees, butterflies and other insects.

13. Ans. (c)

- Nitrogen-fixing bacteria are microorganisms capable of transforming atmospheric nitrogen into fixed nitrogen (inorganic compounds usable by plants).
- More than 90 percent of all nitrogen fixation is affected by these organisms, which thus play an important role in the nitrogen cycle.
- Two kinds of nitrogen-fixing bacteria are recognized.
- The first kind, the free-living (non-symbiotic) bacteria, includes the cyanobacteria (or blue-green algae) Anabaena and Nostoc and genera such as Azotobacter, Beijerinckia, and Clostridium.
- So, points 1, 3, 4, and 5 are correct.

- The second kind comprises the mutualistic (symbiotic) bacteria; examples include Rhizobium, associated with leguminous plants (e.g., various members of the pea family); Frankia, associated with certain dicotyledonous species (actinorhizal plants); and certain Azospirillum species, associated with cereal grasses. So, points 2 and 6 are not correct.
- The symbiotic nitrogen-fixing bacteria invade the root hairs of host plants, where they multiply and stimulate the formation of root nodules, enlargements of plant cells, and bacteria in intimate association.
- Within the nodules, the bacteria convert free nitrogen to ammonia, which the host plant utilizes for its development.
- To ensure sufficient nodule formation and optimum growth of legumes (e.g., alfalfa, beans, clovers, peas, soybeans), seeds are usually inoculated with commercial cultures of appropriate Rhizobium species, especially in soils poor or lacking in the required bacterium.
- Therefore, option (c) is the correct answer.

14. Ans. (d)

- Decline is a general term describing the gradual reduction of growth and vigor in a plant.
- Dieback refers to the progressive death of twigs and branches which generally starts at the tips. So, statement 1 is correct.
- Trees and shrubs affected by the decline and dieback syndrome may die within a year or two after symptoms first appear or in some cases survive indefinitely.
- Decline and dieback may be caused by many factors and is usually progressive over several years.
- Trees and shrubs of all ages may be affected, although this disease complex is usually associated with plants that have attained some size and maturity.
- Some triggering disorders include girdling roots, competition from other plants, soil compaction, and changes in the depth of the water table, salts leached into the root system, low soil nutrients, and inadequate or excessive soil moisture. So, statement 2 is correct.
- Dieback/decline can best be controlled through preventing the occurrence of the initial stress.
- Cultural practices including periodic fertilization, pruning, watering during dry periods, and control of leaf feeding insects and foliar pathogens are essential in preventing the onset of the dieback/decline complex. So, statement 3 is correct.
- Therefore, option (d) is the correct answer.

15. Ans. (a)

- Judicial Review means the power of the courts to examine the constitutionality of any law.
- The term judicial review is nowhere mentioned in the Constitution.
- However, the fact that India has a written constitution and the Supreme Court can strike down a law that goes against fundamental rights, implicitly gives the Supreme Court the power of judicial review. So, statement 1 is correct.
- The power of Judicial Review can be used by both the Supreme Court and High Courts to examine the constitutionality of any law and not just to review the acts that violate Fundamental Rights.
- If the court arrives at the conclusion that the law is inconsistent with the provisions of the Constitution, such a law is declared as unconstitutional and inapplicable.
- In the case of federal relations too, the Supreme Court can use the review powers if a law is inconsistent with the distribution of powers laid down by the Constitution.
- So, statement 2 and statement 3 are not correct.

- Therefore, option (a) is the correct answer.

16. Ans. (c)

- Section 123 in The Representation of the People Act, 1951 defines 'Corrupt practices' such as:
- Bribery is any gift, offer or promise by a candidate or his agent or by any other person with the consent of a candidate or his election agent of any gratification. So, statement 1 is correct.
- The promotion of, or attempt to promote, feelings of enmity or hatred between different classes of the citizens of India on grounds of religion, race, caste, community, or language, by a candidate or his agent or any other person with the consent of a candidate or his election agent for the furtherance of the prospects of the election of that candidate or for prejudicially affecting the election of any candidate.
- In the Balaji case judgment, a Division Bench of the Supreme Court had held that making promises in election manifestos do not amount to a 'corrupt practice' under Section 123 of the Representation of People Act (RP). So, statement 2 is correct.
- Therefore, option (c) is the correct answer.
- Relevance: Supreme Court to reconsider judgment that making promises in election manifestos is not 'corrupt practice'.

17. Ans. (c)

- In Parliament, a proper procedure is to be followed for raising and discussing issues in an orderly manner.
- The term 'motion' in its wide sense means any proposal made for the purpose of eliciting a decision of the House.
- A Motion is one of the important Parliamentary devices through which members can raise matters of urgent public importance. So, statement 1 is correct.
- The notice of a motion is given in writing and addressed to the Secretary-General. So, statement 2 is not correct.
- The admissibility of a motion or part thereof is decided by the Speaker. A motion may be disallowed by the Speaker if it is an abuse of the right of moving a motion or, it obstructs or affects the procedure of the House or, it is in contravention of rules. So, statement 3 is correct.
- Therefore, option (c) is the correct answer.

18. Ans. (c)

- Statement 1 is correct : There is no collateral support for CPs. Hence, only large firms with considerable fi nancial strength can issue the instrument.
- Statement 2 is incorrect : The maturity period of Certifi cates of Deposits can be more than a year if it is issued by All-India Financial Institutions.
- Statement 3 is correct : Repurchase Agreements are a formal agreement between two parties, where one party sells a security to another, with the promise of buying it back at a later date from the buyer.

Commercial Paper

- Commercial Paper (CP) is an unsecured money market instrument issued in the form of a promissory note.
- Big corporations with good credit rating issue commercial paper as a promissory note.
- There is no collateral support for CPs. Hence, only large firms with considerable financial strength can issue the instrument.
- A corporate would be eligible to issue CP provided the tangible net worth of the company, as per the latest audited balance sheet, is not less than Rs. 4 crore.
- All eligible participants shall obtain the credit rating for issuance of Commercial Paper either from Credit Rating Information Services of India Ltd. (CRISIL) or the

Investment Information and Credit Rating Agency of India Ltd.
- (ICRA) or the Credit Analysis and Research Ltd. (CARE) or the FITCH Ratings India Pvt. Ltd. or such other credit rating agency (CRA) as may be specified by the Reserve Bank of India from time to time, for the purpose.
- The minimum credit rating shall be A-2.

Certificate of Deposits
- It is a negotiable money market instrument.
- It is like a promissory note. Rates, terms, and amounts vary from institution to institution.
- The Certificate of Deposit (CD) is an agreement between the depositor and the bank where a predetermined amount of money is fi xed for a specifi c time period.
- CDs can be issued by (i) scheduled commercial banks {excluding Regional Rural Banks and Local Area Banks}; and (ii) select All-India Financial Institutions (FIs) that have been permitted by RBI to raise short-term resources within the umbrella limit fixed by RBI.
- The maturity period of Certificates of Deposits ranges from 7 days to 1 year, if issued by banks. The FIs can issue CDs for a period not less than 1 year and not exceeding 3 years from the date of issue.

Commercial bill
- Commercial bill is a money market instrument which is similar to the bill of exchange; it is issued by a Commercial organization to raise money for short-term needs.
- In India, the participants of the commercial bill market are banks and financial institutions.

Repurchase Agreements
- Also known as repos or buybacks, Repurchase Agreements are a formal agreement between two parties, where one party sells a security to another, with the promise of buying it back at a later date from the buyer. It is also called a Sell-Buy transaction.

19. Ans. (a)
- Statement 3 is incorrect : If the RBI fails to keep inflation within 2-6 per cent for three consecutive quarters, it has to write to the government to justify the reasons for it.

Role of RBI in monetary policy
- The Reserve Bank of India (RBI) is vested with the responsibility of conducting monetary policy.
- This responsibility is explicitly mandated under the Reserve Bank of India Act, 1934.
- The primary objective of monetary policy is to maintain price stability while keeping in mind the objective of growth.
- Price stability is a necessary precondition to sustainable growth.
- In May 2016, the Reserve Bank of India (RBI) Act, 1934 was amended to provide a statutory basis for the implementation of the flexible infl ation targeting framework.
- The amended RBI Act also provides for the inflation target to be set by the Government of India, in consultation with the Reserve Bank, once in every five years.
- Accordingly, the Central Government has notified in the Official Gazette 4 per cent Consumer Price Index (CPI) infl ation as the target with the upper tolerance limit of 6 per cent and the lower tolerance limit of 2 per cent.
- According to the mandate, if the RBI fails to keep inflation within 2-6 per cent for three consecutive quarters, it has to write to the government to justify the reasons for it.
- However, 2020 was taken as an exception because of the pandemic and extra accommodations needed to tide over it.
- Inflation remained above the target range for most of it.

The Central Government notifi ed the following as factors that constitute failure to achieve the inflation target:

(a) the average inflation is more than the upper tolerance level of the infl ation target for any three consecutive quarters; or

(b) the average inflation is less than the lower tolerance level for any three consecutive quarters.

- Prior to the amendment in the RBI Act in May 2016, the fl exible infl ation targeting framework was governed by an Agreement on Monetary Policy Framework between the Government and the Reserve Bank of India of February 20, 2015.
- The Centre, in April 2021, kept the inflation target of the monetary policy framework unchanged at 2-6 per cent for the next five years, until the fiscal year 2025-26.

20. Ans. (b)

- Statement 2 is incorrect : It allows the foreign companies to issue shares.

Indian Depository Receipts

- As per the defi nition given in the Companies (Issue of Indian Depository Receipts) Rules, 2004, IDR is an instrument in the form of a depository receipt created by the Indian depository in India against the underlying equity shares of the issuing company.
- In an IDR, foreign companies would issue shares, to an Indian depository (say the National Security Depository Limited - NSDL), which would in turn issue depository receipts to investors in India.
- The actual shares underlying IDRs would be held by an Overseas Custodian, which shall authorize the Indian depository to issue of IDRs.
- An IDR is a mechanism that allows investors in India to invest in listed foreign companies, including multinational companies, in Indian rupees.

21. Ans. (c)

- Option C is correct : The Geneva Conventions (1949) and their Additional Protocols are international treaties that contain the most important rules limiting the barbarity of war.
- They protect people who do not take part in the fighting (civilians, medics, aid workers) and those who can no longer fight (wounded, sick and shipwrecked troops, prisoners of war).
- The first Geneva Convention protects wounded and sick soldiers on land during war.
- The second Geneva Convention protects wounded, sick and shipwrecked military personnel at sea during war.
- The third Geneva Convention applies to prisoners of war.
- The fourth Geneva Convention affords protection to civilians, including in occupied territory.
- Article 3, common to the four Geneva Conventions, covers situations of non-international armed conflicts.
- They include traditional civil wars, internal armed conflicts that spill over into other States or internal conflicts in which a third State or a multinational force intervenes alongside the government.
- Two Protocols of 1977: Additional to the four 1949 Geneva Conventions were adopted in 1977.
- They strengthen the protection of victims of international (Protocol I) and non-international (Protocol II) armed conflicts and place limits on the way wars are fought.
- In 2005, a third Additional Protocol was adopted creating an additional emblem, the Red Crystal, which has the same international status as the Red Cross and Red Crescent emblems.

22. Ans. (d)

- Statement 1 and 3 are correct: The Turkmenistan-Afghanistan-Pakistan-India Natural Gas Pipeline (TAPI) Project is a proposed 1,814km trans-country natural gas pipeline running across four countries.
- This pipeline is also known as “Peace Pipeline”.
- These countries are – Turkmenistan, Afghanistan, Pakistan and India.
- Statement 2 is correct: The TAPI project is being funded by the Asian Development Bank (ADB), which is also acting as transaction adviser for the development. Extra Edge by OnlyIAS
- The pipeline will transport natural gas from the Galkynysh Gas Field in Turkmenistan through Afghanistan into Pakistan and then to India.
- The pipeline will enter India through the Indian town of Fazilka (near the Indo-Pak border).

23. Ans. (a)

- **Black widow binary:**
- A “black widow binary” is a rapidly spinning neutron star, or pulsar, that is circling and slowly consuming a smaller companion star.
- Pulsars are rapidly spinning neutron stars that are the collapsed cores of massive stars.
- They have an incredibly fast rotational period, spinning around every few milliseconds and emitting flashes of high energy gamma and X-rays while doing so.
- The system derives its name from the "black widow" spiders, in which the female eats the male after mating.
- Therefore, option (a) is the correct answer.
- Relevance: A new Black widow binary was spotted by MIT astronomers recently.

24. Ans. (d)

- The United Nations (UN) Charter gives the Security Council primary responsibility for the maintenance of international peace and security.
- In fulfilling this responsibility, the Security Council authorizes the establishment of a peacekeeping mission.
- The Security Council can vote to extend, amend or end mission mandates as it deems appropriate. So, statement 1 is correct.
- United Nations military personnel are the Blue Helmets on the ground.
- All military personnel working under the Blue Helmet are first and foremost members of their own national armies and are then seconded to work under the command and control of the UN. So, statement 2 is correct
- The United Nations began its Peacekeeping efforts in 1948 when it deployed military observers to West Asia.
- The Peacekeeping mission’s role was to monitor the Armistice Agreement between Israel and its Arab neighbours.
- UN Peacekeepers provide security as well as political and peacebuilding support to conflict-ridden countries. So, statement 3 is correct.
- Over 2 lakh Indians have served in 49 UN Peacekeeping missions since 1948.

- Currently, 5581 Indians are part of various UN Peacekeeping missions.
- India is the third-largest contributor to UN Peacekeeping forces after Bangladesh and Nepal. So, statement 4 is not correct.
- Therefore, option (d) is the correct answer.
- Relevance: A top United Nations (U.N.) official has lauded the Blue Helmet peacekeepers from India as well as other countries for thwarting an attack by an armed group in the Congo.

25. Ans. (d)

- All the statements given above are correct.

About Purandaradasa:

- Purandara Dasa (1484–1564) was a Haridasa, great devotee of Lord Krishna and a saint.
- He was a disciple of the celebrated Madhwa philosopher-saint Vyasatirtha, and a contemporary of yet another great Haridasa, Kanakadasa.
- Purandaradasa was the pioneer who blended the rich musical streams, namely the Dravidian and Aryan music, into a single stream known as Carnatic music.
- Prior to his initiation to Haridasa tradition, Purandara Dasa was a rich merchant and was called as Srinivasa Nayaka.

Contributions to Indian Music:

1. He formulated the basic lessons of teaching Carnatic music by structuring graded exercises known as Svaravalis and Alankaras
2. He introduced the raga Mayamalavagowla as the first scale to be learnt by beginners in the field – a practice that is still followed today.
3. He also composed Gitas (simple songs) for novice students.
4. He is noted for composing Dasa Sahithya, as a Bhakti movement vocalist, and a music scholar.

Social reforms:

1. Purandara Dasa tried to reform existing practices in the society, and preached to others in the local language, Kannada by singing devotional songs.
2. Most of his keertanas deals with social reform and pinpoints defects found in the society.
3. It teaches complete self-surrender and unadulterated love towards Lord Krishna, the Supreme.
4. The philosophy of Bhakti in Purandara Dasa's compositions stems from the essential teachings of the realistic-pluralistic Madhwa Philosophy of Vaishnavism.
5. Purandara Dasa fought the evils of casteism through his songs.
6. In his song aavakulavaadarenu aavanadarenu aatma bhavavariyada mele he wonders what is the use if one does not understand the spirit of humanism whatever caste or status one might be accredited to.
7. According to Purandara Dasa there were no inequalities among men and women.
8. Both of them had same rights and obligations in their conduct of everyday life as well as observation of pity.
9. He made some forceful expressions on untouchability, which was dogging society.

26. Ans. (a)

- Statement 3 is incorrect: Ilahi coins were issued by Akbar himself to propagate his new religious creed 'Din-i-Illahi'.

Mughal Coinage

- The expanding trade under Mughals brought in huge amounts of silver bullion into Asia to pay for goods procured from India.
- As a result, the period between the sixteenth and eighteenth centuries was also marked by a remarkable stability in the availability of metal currency, particularly the silver rupya in India.
- It was an adoption from Sher Shah's currency.

- They also issued a large number of gold coins.
- Mohur was the standard gold coin of the Mughals, weighing about 170 to 175 grains.
- Abul Fazl in his 'Ain-i-Akbari' indicated that a Mohur was equivalent to nine rupees.
- The Mughal copper coin was adopted from Sher Shah's dam which weighed 320 to 330 grains.
- Akbar issued both round and square coins.
- In 1579, Akbar issued gold coins called Ilahi coins to propagate his new religious creed 'Din-i-Illahi'.
- This Coin had enumeration: 'God is great, may his glory be glorified'.
- The value of an ilahi coin was equal to 10 rupees.
- Sahansah was the largest gold coin. These coins bore the names of the persian solar months.
- Jahangir was known to issue couplet in the coins.
- In many he added the name of his beloved wife Noorjahan.
- The most famous of coins of Jahangir had images of Zodiac signs.

27. Ans. (a)

- Option 'a' is the correct answer.
- The Delhi Sultanate was an Islamic empire based in Delhi for 320 years (1206–1526).
- Five dynasties ruled over the Delhi Sultanate sequentially: the Mamluk dynasty, the Khalji dynasty, the Tughlaq dynasty, the Sayyid dynasty and the Lodi dynasty.
- The Mughals were a Muslim dynasty who ruled over a majority of India.
- By 1750, they had dominated much of South Asia for several centuries.
- Babur was the founder of the Mughal empire which was established in 1526 after Babur defeated Ibrahim Lodi in the first battle of Panipat.
- Statement 1 is correct: The Sultan, in the Delhi Sultanate, was the central figure in the administrative set up.
- He was the head of the civil administration and Supreme Commander of the army.
- He made all the appointments and promotions.
- He was also the head of the Judiciary. He also had the right to remove anybody from the service.
- He had absolute power in his hand.
- He used to confer titles and honours upon people.
- Similarly, during Mughal rule, the emperor was the supreme head of the administration and controlled all military and judicial powers.
- All officers in Mughal administration owed their power and position to the Emperor.
- The Emperor had authority to appoint, promote, and remove officials at his pleasure.
- Statement 2 is incorrect: The administration of provincial areas under Delhi sultanate depended on the degree of political control which was exercised over the areas.
- Some of the newly conquered areas were brought directly under the control of the Sultanate and some other areas remained semi-autonomous.
- Thus, there was an element of semi autonomous rule in provinces.
- In the areas that were loosely affiliated to the Sultanate, a few officials were appointed by the Centre as a symbol of imperial presence.
- The provinces were placed under the charge of the Governors who were responsible for the overall administration of the area.
- The Emperor of the Mughal Empire enjoyed absolute power and was always the central administrative authority.
- The Mughal empire was divided into twelve provinces or subas by Akbar.

- With the expansion of Mughal empire the number of provinces increased to twenty.
- Each suba was placed under a Subedar or provincial governor who was directly appointed by the Emperor.
- The subedar was head of the province and responsible for maintenance of general law and order.
- Statement 3 is correct: The village was the smallest unit of administration in both Delhi Sultanate and Mughal Empire.
- In Delhi Sultanate, a number of villages formed the Pargana.
- The important Pargana officials were Chaudhary, Amil (revenue collector) and Karkun (accountant). Village and pargana were independent units of administration, and yet there were inter related areas.
- Similarly, in Mughal Empire, the provinces or subas were divided into Sarkars.
- The Sarkars were divided into Parganas.
- At the level of Sarkar, there were two important functionaries, the faujdar and the Amalguzar.
- The Faujdar was appointed by the imperial order and his primary duty was to safeguard the life and property of the residents of the areas under his Jurisdiction.
- The amalguzar or amil was the revenue collector.

28. Ans. (d)

- Firoz Tughlaq set up a separate department of slaves known as 'Diwan-i-Bandagan'.
- Mohd Bin Tughlaq was succeeded by his cousin (not uncle) Firoz Tughlaq.
- Alauddin Khalji introduced the branding system of horses in his military.

29. Ans. (d)

- Statement 1 is Incorrect: - Also known as '22-degree halo', it is an optical phenomenon that occurs due to sunlight refracting in millions of hexagonal ice crystals suspended in the atmosphere.
- It takes the form of a rainbow-coloured ring with a radius of approximately 22 degrees around the sun or the moon.
- Statement 2 is Incorrect: - Sun halos are produced by cirrus clouds, which are formed at a height of over 20000 feet.
- Hence, sun haloes are indicative of rainfall as cirrus clouds are usually precursor to development of a cyclonic warm front.
- Clouds contain millions of ice crystals which refract, split, and even reflect the light to give an impression of a circular rainbow ring.
- Sunlight through the ice crystals causes the light to split, or be refracted.
- When at just the right angle, it causes us to see the halo.
- During the process, light undergoes two different refractions once when it passes through ice crystals and the second when it exists.
- Statement 3 is Incorrect: - There is no effect of sun halo on the radio transmission of the Earth.
- Sunspots affect radio propagation by ionising the layers of the ionosphere.
- Large concentrations of ionisation in the ionospheric layers increase its ability to bend the HF radio waves and to return the signal back to earth at huge distances from transmitter to the receiver.
- Source:https://www.thehindu.com/news/national/andhra-pradesh/anantapur-witnesses-rare-sun-halo/article34710979.ec

30. Ans. (b)

- Statement 1 is not correct: The Artemis Accords is a bilateral agreement between the United States government and other world governments participating in the Artemis Program, an American-led effort to return humans to the Moon by 2025, with the ultimate goal of expanding space exploration to Mars and beyond.
- It was announced by NASA, the U.S. civil space agency, in 2020.

- It is a set of guidelines surrounding the Artemis Program for crewed exploration of the Moon.
- This agreement is for lunar exploration and beyond, with participation of both international partners and commercial players.
- Statement 2 is not correct: Major Signatories: US, New Zealand, as US, Japan and Australia Australia, Canada, Italy, Japan, Luxembourg, the Republic of Korea, the United Kingdom, the United Arab Emirates, and Ukraine.
- Major space players like India, Russia, China, and Germany are not a signatory of the accord.
- The European Space Agency (ESA) as an organisation has not signed on to the accords either, but a number of ESA member states have.
- Statement 3 is correct : Factors that may prompt India to sign the Artemis Accords are Enhanced space cooperation among Quad countries, By being a part of the accords, India's space companies could become part of a global supply chain; Opportunities to learn about interplanetary missions the accord and human spaceflights
- Reference:https://www.financialexpress.com/lifestyle/science/india-needs-to-moon-trap/2347744/

31. Ans. (c)

- Statement 1 is correct : Nanocomposites are a class of nanomaterials wherein one or more phases at nano-sized dimension (zero dimension, one dimension, and two dimensions) are embedded in a ceramic, metal, or polymer material.
- These can be made by inorganic or organic components at the molecular level to obtain new properties.
- Two materials can be used to fabricate a composite nanomaterial via weak interactions such as van der Waals, hydrogen bonding, weak electrostatic interactions, or by covalent bonds.
- The term nanocomposite is used when discrete structural units in the individual size regime are utilized.
- Nanoparticles, nanorods, nanofibers, and carbon nanotubes (CNTs) are examples of the discrete inorganic units of nanocomposite materials.
- Statement 2 is correct : Guar gum is a polygalactomannan derived from Cyamopsis tetragonolobus endosperm, a leguminous plant.
- It produces extraordinarily effective viscosities, even at low concentrations (≤1% w/v) in aqueous solutions. Because of these qualities, it is frequently employed as a thickener, foam stabilizer, gelling agent, emulsifier, and antistaling agent in the food industry.
- Its established prebiotic impact results in decreased blood cholesterol and blood glucose levels.
- Because of its usage as a dietary fiber, guar gum is also utilized to make foods with a low glycemic index.
- Furthermore, guar gum has recently been used to produce biodegradable food packaging films and as a wall composition for flavor encapsulation.
- Paper, textiles, ceramics, mining, cosmetics, paint, explosives, and pharmaceuticals are just a few sectors that use guar gum and its numerous chemical derivatives.
- Reference:https://dst.gov.in/biodegradable-biopolymer-nanocomposite-detects-relative-humidity-can-monitor-packed-food-freshness

32. Ans. (a)

- Statement 1 is correct : The entire process of convection currents is based on heat generated by radioactive materials in the substratum (now mantle), however numerous scientists have questioned

whether the needed amount of heat generated by radioactive elements is available.

- Statement 2 is incorrect : Convective currents may not be formed if heat is insufficient, and so the entire mechanism and working of the theory will be impossible.
- It's also worth noting that rising currents condense their heat into the crust.
- Statement 3 is incorrect : Arthur Holmes in 1930s discussed the possibility of convection currents in the mantle.
- These currents are generated due to radioactive elements causing thermal differences in the mantle.

33. Ans. (d)

- Option (d) is correct

Kuiper Belt

- The Kuiper Belt is a doughnut-shaped ring of icy objects around the Sun, extending just beyond the orbit of Neptune from about 30 to 55 AU.
- Similar to the asteroid belt, the Kuiper Belt is a region of leftovers from the solar system's early history. Like the asteroid belt, it has also been shaped by a giant planet, although it's more of a thick disk (like a donut) than a thin belt.
- The Kuiper Belt shouldn't be confused with the Oort cloud, which is a much more distant region of icy, comet-like bodies that surrounds the solar system, including the Kuiper Belt.
- Both the Oort cloud and the Kuiper Belt are thought to be sources of comets.

Oort cloud

- The Oort cloud is the most distant region of our solar system. Even the nearest objects in the Oort cloud are thought to be many times farther from the Sun than the outer reaches of the Kuiper Belt.
- Unlike the orbits of the planets and the Kuiper Belt, which lie mostly in the same flat disk around the Sun, the Oort cloud is believed to be a giant spherical shell surrounding the rest of the solar system.
- It is like a big, thick-walled bubble made of icy pieces of space debris the sizes of mountains and sometimes larger.
- The Oort cloud might contain billions, or even trillions, of objects.
- The distance from the Sun to the Oort cloud is so enormous that it's useful to describe it not in the more common units of miles or kilometers, but astronomical units.
- One astronomical unit (or AU) is the distance between Earth and the Sun. Pluto's elliptical orbit carries it as close as 30 AU from the Sun, and as far as 50 AU.
- The inner edge of the Oort cloud, however, is thought to be between 2,000 and 5,000 AU from the Sun.
- The outer edge might be 10,000 or even 100,000 AU from the Sun — that's one quarter to halfway between the Sun and the nearest neighboring star.

34. Ans. (d)

- Autotroph: It is an organism that can produce its own food using light, water, carbondioxide, or other chemicals.
- Most autotrophs use photosynthesis to make their food.
- Some rare autotrophs produce food through a process called chemosynthesis, rather than through photosynthesis.
- Autotrophs that perform chemosynthesis do not use energy from the sun to produce food.
- Instead, they make food using energy from chemical reactions, often combining hydrogen sulfide or methane with oxygen. So, statement 1 is correct.
- There are two subcategories of heterotrophs: photoheterotrophs and chemoheterotrophs.

- Photoheterotrophs are organisms that get their energy from light, but must still consume carbon from other organisms, as they cannot utilize carbon dioxide from the air.
- Chemoheterotrophs, by contrast, get both their energy and carbon from other organisms. So, statement 2 is correct.
- Saprotrophs: These are organism that feeds on non-living organic matter known as detritus at a microscopic level.
- Saprotrophs feed by a process known as absorptive nutrition, in which the nutritional substrate (e.g., dead organism or other non-living organic matter) is directly digested by a variety of enzymes that are excreted by the saprotroph. So, statement 3 is correct.
- Therefore, option (d) is the correct answer.

35. Ans. (d)

- Coral reefs are large underwater structures composed of the skeletons of colonial marine invertebrates called coral.
- Corals are made up of tiny individuals called polyps.
- The polyps form calcium carbonate structures for self-protection.
- Polyps are in a symbiotic relationship with zooxanthellae.
- Due to diversity present around them, they are also knows as the rainforests of the ocean.
- There are three types of coral reefs - Fringing reef, Barrier reef and Atoll.
- Corals are found all over the world's oceans, from the Aleutian Islands off the coast of Alaska to the warm tropical waters of the Caribbean Sea.
- The biggest coral reefs are found in the clear, shallow waters of the tropics and subtropics.
- The largest of these coral reef systems, the Great Barrier Reef in Australia, is more than 1,500 miles long (2,400 kilometers). So, statement 1 is not correct.
- The coral species that build reefs are known as hermatypic, or "hard," corals because they extract calcium carbonate from seawater to create a hard, durable exoskeleton that protects their soft, sac-like bodies.
- Other species of corals that are not involved in reef building are known as “soft” corals.
- These types of corals are flexible organisms often resembling plants and trees and include species such as sea fans and sea whips. So, statement 2 is not correct.
- Corals feed in one of two ways. Some species catch small marine life, like fish and plankton, by using stinging tentacles on the outer edges of their bodies.
- Most corals, however, depend on algae called zooxanthellae to provide energy via photosynthesis. So, statement 3 is not correct.
- The corals have a symbiotic, or mutually beneficial, relationship with the zooxanthellae.
- These algae live inside the coral polyp's body where they photosynthesize to produce energy for themselves and the polyps.
- The polyps, in turn, provide a home and carbon dioxide for the algae.
- Additionally, the zooxanthellae provide the coral with their lively colours — most coral polyp bodies are clear and colourless without zooxanthellae.
- Therefore, option (d) is the answer.
- Relevance: Scientists have recorded four species of azooxanthellate corals for the first time from Indian waters.

36. Ans. (d)

- Statement 3 is incorrect: Temperature and precipitation are the major climatic factors that lead to the formation of major biomes.

Biomes

- The terrestrial part of the biosphere is divisible into enormous regions called biomes.
- Aquatic systems are not called biomes.
- No two biomes are alike . They are characterized, by a distinct climate (precipitation and temperature mainly), vegetation, animal life, and general soil type.
- The climate determines the boundaries of a biome and abundance of plants and animals found in each one of them.
- Variations in temperature together with annual variation in precipitation (including both rain and snow) are the most important climatic factors that account for the formation of major biomes such as desert, rain forest, and tundra.
- Regional and local variations within each biome lead to the formation of a wide variety of habitats.

37. Ans. (c)

- Draw of lot is a method applied to determine the relative precedence of private members' bills and resolutions, notices of questions, half-an-hour discussions or any other notice given by more than one member simultaneously for being taken up on the same day.
- Point of Order is an extraordinary process which, when raised, has the effect of suspending the proceedings before the House and the member who is on her/his legs gives way.
- This is meant to assist the presiding officer of the House in enforcing the Rules, Directions and provisions of the Constitution for regulating the business of the House.
- List of Business is a list of items of business scheduled to be taken up in the House on a particular day of the sitting.
- Guillotine means to bunch together and fast-track the passage of financial business.
- Parliament, unfortunately, has very limited time for scrutinising the expenditure demands of all the ministries.
- So, once the prescribed period for the discussion on demands for grants is over, the Speaker applies the 'guillotine', and all the outstanding demands for grants, whether discussed or not, are put to vote at once.
- Therefore, option (c) is the correct answer.

38. Ans. (a)

- Budget consists of two types of expenditure: expenditure 'charged' on the Consolidated Fund of India and expenditure 'made' from the Consolidated Fund of India.
- The 'charged' expenditures are non-votable by the Parliament.
- It can only be discussed by the Parliament.
- Some of the important 'charged' expenditures on the Consolidated Fund of India are as follows:
- Emoluments and allowances of the President of India
- Salaries and allowances of the Chairperson and Deputy Chairperson of the Rajya Sabha and the Speaker and Deputy Speaker of the Lok Sabha. So, points 1 and 2 are correct.
- Salaries, allowances and pensions of the Comptroller and Auditor General of India. So, point 3 is correct.
- Salaries, allowances and pensions of the judges of the Supreme Court.
- Salaries, allowances and pensions of the Chairman and members of the Union Public Service Commission.
- The allowance of the members and Chairperson of the State Public Service Commission (SPSC) is not charged on the Consolidated Fund of India.
- The entire expense including the salaries, allowances and pensions of the Chairman and members of an SPSC are charged on the Consolidated Fund of the State. So, point 4 is not correct.

- Pensions of the judges of High Courts are charged on Consolidated Fund of India, but their salaries and allowances are charged on the Consolidated Fund of states. So, point 5 is not correct.
- Therefore, option (a) is the correct answer.

39. Ans. (b)

- A resolution is one of the procedural devices to raise a discussion in the House of the Parliament on a matter of general public interest.
- Every question when agreed to becomes either an order or a resolution of the House.
- All the resolutions come in the category of substantive motions, that is, every resolution is a particular type of motion.
- All the motions need not necessarily be substantive.
- Thus all resolutions are motions but not all motions are resolutions. So, statement 1 is not correct.
- All the motions are not necessarily put to vote in the House, whereas all the resolutions are required to be voted upon. So, statement 2 is correct.

Resolutions may be classified as:

- Government Resolutions: Resolution which was moved by a Minister.
- Private member's Resolution: Resolutions that are moved by a member other than Ministers.
- Statutory Resolutions: Resolutions that are moved in pursuance of a provision in the Constitution or an Act of Parliament are termed statutory resolutions.
- Notice of such resolution may be given either by a Minister or by a Private member. So, statement 3 is not correct.
- Therefore, option (b) is the correct answer.

40. Ans. (d)

- In the following matters, the powers and status of the Legislative Council of the State are broadly equal to that of the State Legislative Assembly:
- Selection of ministers including the Chief Minister.
- Under the Constitution, the ministers including the Chief Minister can be members of either House of the State Legislature.
- Approval of ordinances issued by the Governor. So, point 3 is correct.
- Enlargement of the jurisdiction of the State Public Service Commission. So, point 4 is correct.
- In the following matters, the powers and status of the Legislative Council of the State are unequal to that of the State Legislative Assembly:
- A Money Bill can be introduced only in the Assembly and not in the Council. So, point 1 is not correct.
- The final power of passing an ordinary bill also lies with the Assembly.
- At most, the Council can detain or delay the bill for the period of four months–three months in the first instance and one month in the second instance.
- The council cannot remove the Council of Ministers by passing a no-confidence motion. So, point 2 is not correct.
- Therefore, option (d) is the correct answer.

41. Ans. (d)

- Statement 1 is correct: Effective Revenue Deficit is the difference between revenue deficit and grants for the creation of capital assets.
- Statement 2 is correct: A shrinking primary defi cit indicates progress towards fiscal health.
- Statement 3 is correct: Fiscal Deficit equals the money the government needs to borrow during the year.

Fiscal Deficit

- Fiscal Deficit is the gap between the government's expenditure requirements and its receipts.
- This equals the money the government needs to borrow during the year. A surplus arises if receipts are more than expenditures.
- Fiscal Deficit = Total expenditure – (Revenue receipts + Non-debt creating capital receipts) Effective Revenue deficit Effective Revenue defi cit is a term introduced in the Union Budget 2011-12.
- While revenue deficit is the difference between revenue receipts and revenue expenditure, the present accounting system includes all grants from the Union Government to the state governments/ Union territories/other bodies as revenue expenditure, even if they are used to create assets.
- An effective revenue deficit excludes those revenue expenditures (or transfers) in the form of grants for the creation of capital assets.

Primary Deficit

- Gross Primary Defi cit is Gross Fiscal Deficit minus Net interest liabilities.
- Net Primary Defi cit is Net Fiscal Deficit minus net interest payments.
- The net interest payment is interest paid minus interest receipt.
- A shrinking primary defi cit indicates progress towards fiscal health.

42. Ans. (d)

- All statements are correct

Government Budget

- There is a constitutional requirement in India (Article 112) to present before the Parliament a statement of estimated receipts and expenditures of the government in respect of every financial year.
- This 'Annual Financial Statement' constitutes the main budget document of the government.
- Although the budget document relates to the receipts and expenditure of the government for a particular fi nancial year, the impact of it will be there in subsequent years.
- There is a need therefore to have two accounts- those that relate to the current financial year only are included in the revenue account (also called revenue budget) and those that concern the assets and liabilities of the government into the capital account (also called capital budget).

The Budget contains the following elements:

- Estimates of revenue and capital receipt Ways and Means to raise revenue Estimates of expenditure Details of the actual receipt and expenditure of the closing financial year.

43. Ans. (b)

- Statement 1 is incorrect: It is required for both inter and intra-state movement.
- Statement 2 is incorrect: E-way bill is to be generated by the consignor or consignee himself if the transportation is being done in own/hired conveyance or by railways by air or by Vessel.
- If the goods are handed over to a transporter for transportation by road, E-way bill is to be generated by the Transporter.
- Where neither the consignor nor consignee generates the e-way bill and the value of goods is more than Rs. 50, 000/- it shall be the responsibility of the transporter to generate it.

E-way bill

- It is a document required to be carried by a person in charge of the conveyance carrying any consignment of goods of value exceeding fifty thousand rupees as mandated by the Government in terms of Section 68 of the Goods and Services Tax Act.
- E-way bill is required to be generated by a registered GST taxpayer for movement of goods if the value of the consignment is more than Rs. 50,000 for inter-State movement.
- For intra- State movement, limits vary from State to State.
- The e-way bill is required to transport all the goods except exempted under the notifications or rules.
- Movement of handicraft goods or goods for job-work purposes under specifi ed circumstances also requires the e-way bill even if the value of consignment is less than fifty thousand rupees.
- The validity of the e-way bill depends upon the distance the goods have to be transported.
- In the case of regular vehicle or transportation modes, for every 100 KMs or part of its movement, one-day validity has been provided.
- And in the case of Over Dimensional Cargo vehicles, for every 20 KMs or part of its movement, one-day validity is provided.
- And this validity expires on the midnight of last day.
- The consignor or consignee, as a registered person or a transporter of the goods, can generate the e-way bill.
- The unregistered transporter can enroll on the common portal and generate the e-way bill for the movement of goods for his clients.
- Any person can also enroll and generate the e-way bill for the movement of goods for his/ her own use.
- Kerala High Court has upheld that E-way bill is not required for transportation of used personal vehicles. The issue here was purchase of a 'Range Rover' motor vehicle for which IGST (Integrated Goods & Services Tax) was paid.

44. Ans. (c)

- Nagorno-Karabakh is a landlocked, mountainous and forested region with a population of around 150,000, falling within the boundaries of Azerbaijan.
- Nagorno-Karabakh, called Artsakh in Armenian, hosts a predominantly ethnic Armenian population with an Azeri minority.
- It is a disputed region between Armenia and Azerbaijan. So, statement 1 is correct.
- It is located in the South Caucasus region, which straddles the border between Eastern Europe and western Asia and spans the southern part of the Caucasus Mountains, which is roughly made up of modern-day Armenia, Azerbaijan, and Georgia. So, statement 2 is not correct.
- The Minsk Group was created by the Organisation for Security and Cooperation in Europe (OSCE) in early 1990 to facilitate talks between Armenia and Azerbaijan to find a peaceful solution to the Nagorno-Karabakh conflict.
- The Minsk Group was co- chaired by Russia, the United States, and France. So, statement 3 is correct.
- Therefore, option (c) is the correct answer.
- Relevance: Armenia has been witnessing growing anti-government protests in recent weeks against possible concessions over the Nagorno-Karabakh territory.

45. Ans. (c)

- Web 5.0 is a decentralized web platform and is being built to return "ownership of data and identity to individuals".
- Simply put, Web 5.0 is Web 2.0 plus Web 3.0 that will allow users to 'own their identity on

the Internet and 'control their data'. So, statement 1 is correct.

- For Web 5, developers don't need a blockchain for everything.
- And they can build decentralised applications on well-understood distributed centralised systems of computer science. So, statement 2 is not correct.
- Web 5.0 will have a series of decentralized apps and protocols.
- Instead of multiple blockchains, Web 5.0 developers are trying to leverage only Bitcoin and build everything on top of it.
- In Web 5.0, users will hold a digital wallet that securely manages their identity, data, and authorisations for external apps and connections. So, statement 3 is correct.
- Therefore, option (c) is the correct answer.
- Relevance: Former Twitter CEO recently announced his vision for a new decentralized web platform that is being called Web 5.0.

46. Ans. (b)

- Graphene is a 3D material as well as a 2D material.
- It has high surface area. Graphene is harder than diamond yet more elastic than rubber; tougher than steel yet lighter than aluminium – graphene is the strongest known material. So, statement 1 is not correct.
- Graphene has emerged as one of the most promising nano-materials because of its unique combination of exceptional properties.
- It conducts heat better than all other materials; it is an excellent conductor of electricity; it is optically transparent, yet so dense that it is impermeable to gases – not even helium, the smallest gas atom, can pass through it. So, statement 2 is not correct.
- Graphene is the basic building block for other graphitic materials like carbon nanotubes.
- Other uses of graphene include - It improves both energy capacity and charge rate in rechargeable batteries; activated graphene makes superior supercapacitors for energy storage; graphene electrodes may lead to a promising approach for making solar cells that are inexpensive, lightweight and flexible. So, statement 3 is correct.
- For conventional electrons, the current flows only in one direction dictated by the magnetic field ('downstream').
- However, recently physicists have discovered that graphene also has counter-propagating channels where some quasiparticles can also travel in the opposite ('upstream') direction. So, statement 4 is not correct.
- Therefore, option (b) is the correct answer.

47. Ans. (d)

- Option (d) is correct:

Martial Art	**State**
A. Kalaripayattu	4. Kerala
B. Gatka	1. Punjab
C. Pari-Khand	3. Bihar
D. Inbuan Wrestling	2. Mizoram

Martial Arts in India

- **Kalaripayattu:** One of the oldest Tamil martial arts in India, Kalaripayattu, although practiced in most parts of southern India, originated in the ancient Tamil Country (art form is more predominant in the Chera Nadu Region) in the 3rd century BC mentioned in the Sangam Literature.
- Kalari, a Tamil / Malayalam word, refers to a battle field/ circular area for dramatic performances, gladiatorial or gymnastic exhibitions or a specific type of school/ gymnasium/training hall where martial arts are practiced or taught (in this case it's Kalaripayattu).

- Its most important key is footwork; it also includes kicks, strikes and weapon-based practice.
- Even women practice this art.
- Even though Kalaripayattu is used as a means of unarmed self-defense and a way to achieve physical fi tness today, it is still rooted in the traditional rituals and ceremonies.

- **Pari-Khanda:** Pari-Khanda, created by Rajputs, is a form of martial art from Bihar.
- It involves fighting using sword and shield.
- Still practiced in many parts of Bihar, its steps and techniques are widely used in Chhau dance.
- In fact this martial art forms the basis of Chhau dance in which all its elements are absorbed.
- The name of this martial art consists of two words, 'Pari' that means shield while 'khanda' refers to sword, thus the use of both sword and shield in this art.

- **Gatka:** Gatka is a weapon based martial art form, performed by the Sikhs of Punjab.
- The name 'Gatka' refers to the one whose freedom belongs to grace.
- Gatka features the skillful use of weapons, including stick, Kirpan, Talwar and Kataar.
- The attack and defense in this art form is determined by the various positions of hands and feet and the nature of weapon used.
- It is displayed on a number of celebrations in the state including fairs.

- **Inbuan Wrestling:** A native martial art form of Mizoram, Inbuan Wrestling is believed to have its genesis in 1750 A.D. in Dungtlang village.
- It has very strict rules that prohibit stepping out of the circle, kicking and knee bending.
- The way to win this is by lifting the opponent off their feet, while stringently adhering to the rules.
- It also involves catching of the belt (worn around their waist) by the wrestlers.
- This art form was regarded as a sport only after the people of Mizoram migrated from Burma to Lushai hills.

48. Ans. (b)

- Statement 3 is incorrect : It is a notable work of Golconda school of paintings.

Deccani Painting

- The history of Deccani Painting can largely be constructed from the late sixteenth century until the 1680s— the time when the Mughals conquered the Deccan.
- The Deccani style of Painting was placed under the Indo-Persian (Shiraz style) art for long.
- It was considered to be Middle Eastern, Safavid, Persian, Turkish and even Mughal in origin.
- Art historians acknowledged its uniqueness but failed to recognise it as a full-fledged school, which was sustained by a class of rulers, who had their peculiar political and cultural vision.
- They hired and nurtured artists and commissioned works that enhanced their artistic sensibilities and specific requirements of governance in their kingdoms.
- The earliest five miniatures, identified as Golconda work, were bound up in Diwan of Hafi z, dated 1463.
- These paintings represent court scenes of a young ruler, who is depicted seated enthroned, holding a typically long and straight Deccani sword, in the centre of one of the painting folios.
- The Prince is seen wearing a white coat with embroidered vertical bands. All five painted pages are lavishly enriched with gold,

touching deep azure sky. notable work, 'Lady with myna bird'(YOGINI) belongs to Golconda painting school.
- The Yogini is adorned with jewellery and her hair bun elongates her visual presence.

49. Ans. (b)
- Option A is Incorrect: Digital embossing Technology relates to digital printing that eliminates the need for printing plates, moulds, chemicals, and solvents, besides releasing no pollutants or waste and reducing overall energy usage.
- Option B is Correct: - A zero-day (0day) exploit is a cyber-attack targeting a software vulnerability which is unknown to the software vendor or to antivirus vendors.
- Pegasus, a spyware tool, delivers "a chain of zero-day exploits to penetrate security features on the phone/other devices.
- Option C is Incorrect: - IIT Ropar with Monash University, Australia have developed a unique detector named 'FakeBuster' which is a deep fake identification tool to detect imposters during video conferencing.
- Option D is Incorrect: - Delphi is an Artificial Intelligence (AI) system designed to make moral judgments.
- It hopes to build an ethical framework that could be installed in any online service, robot or vehicle.
- Source: https://www.thehindu.com/sci-tech/technology/pegasus-issue-what-are-zero-click-attacks-and-how-they-infect-smartphones/article35425581.ece

50. Ans. (d)
- Statement 1 is correct : Low-temperature thermal desalination (LTTD) is a technique for desalination.
- It works on the notion that water evaporates at lower temperatures, at low pressures.
- It utilizes vacuum pumps for creating a low pressure and low-temperature environment, resulting into evaporation of water at a temperature gradient of 8 °C. Cooling water is supplied from deep sea depths, which is pumped up to condense evaporated water vapor.
- We get purified water from the resulting condensate.
- Statement 2 is correct : Three desalination plants based on the LTTD technology have been developed and demonstrated at Kavaratti, Agati and Minicoy Islands of Union Territory of Lakshadweep.
- The capacity of each of these LTTD plants is 1 Lakh litre of potable water per day.
- Union Territory of Lakshadweep has been entrusted the work of establishing 6 more LTTD plants at Amini, Androth, Chetlet, Kadmat, Kalpeni and Kiltan with a capacity of 1.5 lakhs litres/day.
- Further, the LTTD technology is found suitable for Lakshadweep islands where the required temperature difference of about 15^{o} C between sea surface water and deep sea water is found in the vicinity of Lakshadweep coasts only as of now.
- Statement 3 is correct : Ministry of Earth Sciences (MoES) through its autonomous Institute National Institute of Ocean Technology (NIOT) has developed Low Temperature Thermal Desalination (LTTD) technology for conversion of sea water to potable water which has been successfully demonstrated in Lakshadweep islands.
- NIOT is managed by a Governing Council and the Director is the head of the Institute.
- Major aim of starting NIOT under the Ministry of Earth Sciences, is to develop reliable indigenous technologies to solve the various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ), which is about two-thirds of the land area of India.

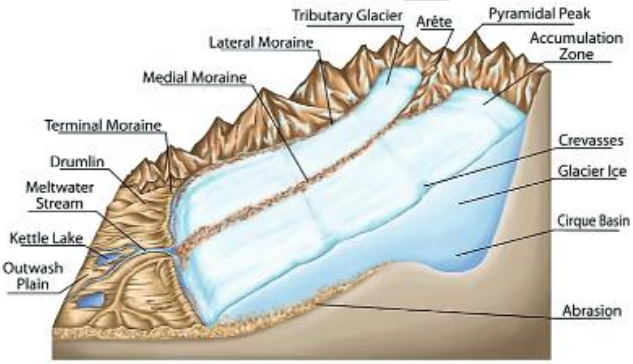
- **Reference** :https://newsonair.com/2022/08/14/roshni-indias-first-saline-water-lantern-uses-seawater-for-power/
- https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1843523

51. Ans. (d)

- All statements are correct

Glacial depositional landforms

- Although today's glaciers are small and constantly disappearing as a result of climate change, the situation was substantially different in the past.
- Almost the entire surface of the Earth was once covered in ice and snow, according to scientists.
- Evidence for the aforementioned fact can be seen in the glacial erosional and depositional structures still present on Earth's surface.
- Depositional landforms created by glaciers and how such landforms are formed:



- Outwash Fan: When the braided streams of a flowing glacier deposit sediments on a flat plain, it results in the formation of an outwash fan.
- Usually, such landforms are produced by valley glaciers.
- As a glacier flows down the mountain slope, it picks up debris from the bedrock.
- After flowing through a valley, the glacier enters a wider and flatter plain.
- Here, it deposits the sediments in a fan-shaped body known as an outwash fan.
- Moraine: A moraine is another glacial depositional feature.
- It consists of accumulated rocks, dirt, and other debris that have been deposited by a glacier.
- The size of deposits in moraines vary from tiny particles of sand to large boulders.
- The deposits accumulate on the surface in an unstratified manner without any type of sorting.
- Moraines are commonly occurring glacial landforms and are often seen in the Himalayan and Alpine mountain regions, Greenland, etc.
- Kame: A kame is another depositional landform of a glacier. It is a hill or mound that lacks a proper shape. Kames are composed of till, gravel, and sand that can be observed after the retreat of glaciers.
- Such a feature is usually formed when debris from a rockfall or other large volumes of debris fall through a crevasse of a glacier and accumulate in the depression.
- When the glacier retreats, the kame becomes visible as an elevation of land on the bedrock through which the glacier previously flowed.
- Kames are common in Edmonton, Alberta where they make up the Prosser Archaeological Site.
- The Fonthill Kame located in Ontario, Canada, is also an example of a kame area.

52. Ans. (d)

- Option (d) is correct

Orogeny

- Orogeny is the primary mechanism by which mountains are formed on continents.
- An orogeny is an event that takes place at a convergent plate margin when plate motion compresses the margin. An orogenic belt or orogen develops as the compressed plate

crumples and is uplifted to form one or more mountain ranges.

- Categorization of orogenic belts into three types: accretionary, collisional, and intracratonic Stages:
- An orogenic belt undergoes several phases of sedimentation, magmatism, metamorphism, and deformation as it evolves into a mountain range.
- Plate tectonic models are able to provide an explanation for many, if not most, of the changes that occur from one phase to another.

53. Ans. (a)

- Statement 4 is incorrect : Rivers with high sinuosity, or lots of bends, often create longer oxbow lakes than rivers that naturally flow in straighter lines.

Ox-bow Lake

- An oxbow lake gets its name from the U - shaped collar placed around an ox's neck to which a plow is attached.
- It can also be called a horseshoe lake, a loop lake, or a cutoff lake.
- An oxbow lake starts out as a curve, or meander, in a river.
- A lake forms as the river finds a different, shorter, course.
- The meander becomes an oxbow lake along the side of the river.
- Oxbow lakes usually form in flat, low-lying plains close to where the river empties into another body of water.
- On these plains, rivers often have wide meanders.
- Meanders that form oxbow lakes have two sets of curves: one curving away from the straight path of the river and one curving back.
- The corners of the curves closest to each other are called concave banks.
- The concave banks erode over time.
- The force of the rivers flowing water wears away the land on the meanders concave banks.
- The banks opposite the concave banks are called convex banks.
- The opposite of erosion happens here.
- Silt and sediment build up on convex banks.
- This build-up is called deposition.
- Erosion and deposition eventually cause a new channel to be cut through the small piece of land at the narrow end of the meander.
- The river makes a shortcut. Oxbow lakes are the remains of the bend in the river.
- Oxbow lakes are Stillwater lakes. This means that water does not flow into or out of them.
- There is no stream or spring feeding the lake, and it does not have a natural outlet.
- Oxbow lakes often become swamps or bogs, and they often dry up as their water evaporates.

54. Ans. (c)

- Option 1 is not correct : Greenwashing is the process of conveying a false impression or providing misleading information about how a company's products are more environmentally sound.
- Greenwashing is considered an unsubstantiated claim to deceive consumers into believing that a company's products are environmentally friendly.
- Option 2 is not correct : The pyrolysis process is the thermal decomposition of materials at elevated temperatures in an inert atmosphere.
- It involves a change of chemical composition.
- The word is coined from the Greek-derived elements pyro "fire", "heat", "fever" and lysis "separating".
- Pyrolysis is one of the technologies available to convert biomass to an intermediate liquid

product that can be refined to drop-in hydrocarbon biofuels, oxygenated fuel additives and petrochemical replacements.

- Pyrolysis is the heating of an organic material, such as biomass, in the absence of oxygen.
- Biomass pyrolysis is usually conducted at or above 500 °C, providing enough heat to deconstruct the strong bio-polymers mentioned above.
- Option 3 is correct : Biomining is a process by which garbage is treated with bio-organisms or natural elements like air and sunlight so that the biodegradable elements in the waste break down over time.
- Civic authorities in charge of collecting waste, usually dump mixed waste biodegradable and non-biodegradable in the garbage dump sites over the years.
- Through bio-mining, this unsegregated accumulated heap of waste is exposed to bio-organisms and to air and sun so that the biodegradable waste among the layers gets decomposed through the natural process.
- Whatever is left over will be the non-biodegradable material, which has to be dealt with separately.
- Option 4 is not correct : Biosparging is the process of pumping pressurized air or gas into a polluted area to stimulate in-situ aerobic biological activity.
- This technology targets chemical substances such as mineral oils and benzene, toluene, ethylbenzene, xylene, and naphthalene (BTEXN) that can be biodegraded under aerobic conditions and is used to treat soluble and residual contaminants in the saturated zone.
- By giving oxygen to the microorganisms and increasing the interactions between air, water, and the aquifer, the injection of air (and gaseous nutrients if needed) promotes the development of the aerobic microbial population and thereby enhances the bioavailability of pollutants.
- Reference : https://www.thehindu.com/news/cities/Mangalore/bio-mining-to-clear-legacy-waste-dumped-at-pachchanady-to-begin-soon/article65363566.ece

55. Ans. (a)

- Statement 1 is correct: The Commission for Air Quality Management (CAQM) was formed by an ordinance, "Commission for Air Quality Management (CAQM) in National Capital Region and Adjoining Areas Ordinance 2020", in October 2020.
- It has given the central pollution control board powers to operationalise measures under the Graded Response Action Plan (GRAP) on air pollution.The GRAP is a set of emergency measures to be implemented to control air pollution depending upon the air quality.
- Statement 2 is correct: The Commission will supersede bodies such as the central and state pollution control boards of Delhi, Punjab, Haryana, UP and Rajasthan.
- It will have the powers to issue directions to these state governments on issues pertaining to air pollution.
- The Commission will have the power to impose a fine of up to Rs 1 crore and imprisonment of up to 5 years in case its directions are contravened.
- Statement 3 is incorrect: CAQM will be a permanent body and will have over 20 members and to be chaired by a government official of the rank of Secretary or Chief Secretary.
- It has exclusive jurisdiction over the NCR, including areas in Haryana, Punjab, Uttar Pradesh and Rajasthan, in matters of air pollution, and will be working along with CPCB and ISRO, apart from the respective state governments.
- It is also a statutory authority.

- Reference: https://www.hindustantimes.com/cities/delhi-news/worst-nov-for-delhi-s-air-11-severe-pollution-days-101638048719960.html
- https://indianexpress.com/article/cities/delhi/air-panel-directs-work-from-home-schools-and-colleges-shut-in-delhi-ncr-7626384/

56. Ans. (d)

- Statement 1 is not correct : Recently, the Climate Equity Monitor dashboard has been launched by the Ministry of Environment, Forest and Climate Change.
- CEM is an online dashboard for assessing, at the international level, equity in climate action, inequalities in emissions, energy and resource consumption.
- Climate Equity Monitor, that focuses on equity and climate action from a data and evidence-based perspective will encourage a vigorous discussion on this crucial issue and engage experts from all countries.
- The Minister also congratulated the team that worked on this project.
- The Climate Equity Monitor provides an online dashboard for assessing, at the international level, equity in climate action, inequalities in emissions, energy and resource consumption across the world, and ongoing climate policies of several countries.
- The website has been developed by independent researchers from India.
- Statement 2 is not correct : The equitable sharing of the global carbon budget is the fundamental equity principle that will underpin the assessments that will progressively appear on the website.
- Aimed at monitoring the performance of Annex-I Parties under the UNFCCC (developed countries) based on the foundational principles of the Climate Convention, namely equity and the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC).
- Annex I Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States.
- The performance and policies of the Non Annex-I Parties (developing countries) will be also provided for comparison.
- The website is expected to be a valuable tool for policy makers, public institutions, researchers, academics, students, and the general public from developing countries to keep equity and climate justice considerations clearly in view in their perspective.
- Reference : https://pib.gov.in/PressReleasePage.aspx?PRID=1768174

57. Ans. (c)

- Option C is correct : The 26th session of the Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change (UNFCCC) is being held in Glasgow, UK.Scientists from the University of Leeds in England have studied a chain of glaciers in the Getz basin of Antarctica.
- 14 glaciers in the Getz Basin of West Antarctica are thinning by an average of 25% between 1994 and 2018 due to climate change.
- The 315 gigatonnes of ice were lost from the region in the last 25 years and contributing to rising global sea levels.
- The Getz basin is part of Antarctica's largest ice shelf.
- The shelf is subject to more changeable oceanic forcing - a process where relatively warm deep ocean water melts the glaciers from below - than other Antarctic shelves.

- Recently, the 100-km long body of ice in Antarctica, which has been experiencing rapid melting, was formally named Glasgow after the Glasgow climate summit.
- This glacier, a glacier in far-off Antarctica has been formally named Glasgow Glacier in honour of Glasgow, Scotland, which is hosting the high-level UN climate conference.
- It is a 100-kilometre-long body of ice which has been rapidly melting.
- Scientists have studied a chain of glaciers in the Getz basin of West Antarctica.
- 14 glaciers in the Getz Basin (part of Antarctica's largest ice shelf) are thinning by an average of 25% between 1994 -2018.
- Aside from Glasgow, the eight newly named glaciers are Geneva, Rio de Janeiro, Berlin, Kyoto, Bali, Stockholm, Paris, and Incheon, all named after towns that hold key UN climate conferences.
- Over the past 40 years, satellites have observed huge iceberg calving events.
- Reference: https://indianexpress.com/article/world/glacier-in-antarctica-named-after-glasgow-climate-summit-7600845/

58. Ans. (a)

- Option (a) is incorrect

Right to Equality

- Articles 14 to 18 of the constitution deals with the Right to equality.
- Article 14 says that the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.
- Rule of Law implies an absence of any privileges to any individual or a community whereas the Equal Protection of Law indicates different treatment in different circumstances.
- The idea of 'Rule of Law' has been taken from English Law, propounded by A.V.Dicey.

According to Professor A.V Dicey, for achieving supremacy of law three principles of postulates must be followed which are as follows:

1. Supremacy of law,
2. Equality before law and
3. Predominance of Legal Spirit

- The concept of 'equality before law' is of British origin while the concept of 'equal protection of laws' has been taken from the American Constitution.
- 'Equality before law' connotes the absence of any special privileges in favour of any person and the equal subjection of all persons to the ordinary law of the land administered by ordinary law courts.
- 'Equal protection of law' indicates the equality of treatment under equal circumstances, both in the privileges conferred and liabilities imposed by the laws.
- It says that the like should be treated alike without any discrimination.
- Thus, the former (Equality before law) is a negative concept while the latter (Equal protection of law) is a positive concept.
- The rule of equality before law is not absolute and there are constitutional and other exceptions to it.
- These include: President of India and the Governor of States have immunity of getting no criminal proceedings instituted or continued against them during their term.
- No civil proceedings against the President or the Governor shall be instituted during his term of office in any court in respect of any act done by him in his personal capacity, whether before or after he entered upon his office, until the expiration of two months next after notice has been delivered to him.
- No member of the Legislature of astate or Parliament shall be liable to any proceedings

in any court in respect of anything said or any vote given by him in the Legislature or any committee thereof.

- Article 31-C is an exception to Article 14.
- It provides that the laws made by the state for implementing the Directive Principles contained in clause (b) or clause (c) of Article 39 cannot be challenged on the ground that they are violative of Article 14.
- The foreign sovereigns (rulers), ambassadors and diplomats enjoy immunity from criminal and civil proceedings.
- The UNO and its agencies enjoy the diplomatic immunity.

59. Ans. (c)

- Statement 1 is incorrect : When the legislatures of two/more states pass a resolution requesting the Parliament to enact laws on a matter in the State List.
- Statement 3 is incorrect : No such provision is present for financial emergency.

Parliamentary legislation in the State field

Parliament can make laws on any matter enumerated in the State List under the following 5 extraordinary circumstances:

- When RS passes a resolution.
- During a National Emergency.
- When states make a request.
- To implement International Agreements.
- During President's Rule.

- **When RS passes a resolution –** If the RS declares that it is necessary for the National Interest that Parliament should make laws on matter enumerated in the State List Such a resolution must be supported by two-thirds of the members present & voting.

- **During a National Emergency –** Parliament (makes laws) acquires the power to legislate with respect to matters in the State List while an emergency is in operation. The laws become inoperative on the expiration of 6 months after the emergency has ceased to operate.

- **When states make a request –** When the legislatures of two/more states pass a resolution requesting the Parliament to enact laws on a matter in the State List. A law so enacted applies only to those states which have passed the resolution. Any other state may adopt it afterward by passing a resolution. Such a law can be repealed / amended only by the Parliament & not by concerned state legislatures. Ex. Prize Competition Act, 1955; Wildlife (Protection) Act, 1972; Water (Prevention & Control of Pollution) Act, 1974 etc.

- **To implement International Agreements:** Parliament can make laws for implementing International treaties, agreements, or conventions Ex. UN (Privileges & Immunities) Act, 1947; Geneva Convention Act, 1960; legislation relating to TRIPS etc.

- **During President's Rule –** When the President's rule is imposed on the state, the Parliament can make laws on matters in the State List. A law made so by the parliament continues to be operative even after the President's rule. But, such a law can be repealed/altered/ re-enacted by the State Legislature.

60. Ans. (d)

- Option (d) is correct

Union Budget

- Constitution of India does not specifically use the word Budget and refers to the budget as the 'annual financial statement'
- The Annual Financial Statement distinguishes the expenditure on revenue

account from the expenditure on other accounts, as is mandated in the Constitution of India.

- Department of Economic Affairs, Ministry of Finance is the nodal body responsible for preparing the Budget.
- Budget 2021-22 is the first budget of the new decade 2021-30 and is also the first ever digital union budget.
- Lok Sabha has the control over the voting and passage of the budget.
- If the budget fails to get passed by the lok Sabha, the presenting government is learnt to be failed at holding the majority in the Lok Sabha and the Prime Minister submits the resignation from the government along with council of ministers.

61. Ans. (b)

- Statement 1 is incorrect: In this, the debt of a distressed company is resolved through a direct agreement between secured creditors and the existing owners or outside investors, instead of a public bidding process.

Pre Pack Mechanism

- A pre-pack envisages the resolution of the debt of a distressed company through a direct agreement between secured creditors and the existing owners or outside investors, instead of a public bidding process.
- Recently central government promulgated an ordinance for pre-packs to be used as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs) which have defaults up to Rs 1 crore under the Insolvency and Bankruptcy Code.
- A pre-pack is the process of debt resolution of a distressed company by an agreement between secured creditors and investors instead of a public bidding process.
- Under this resolution, the company's business is negotiated with a buyer before the appointment of insolvency professional.
- It is a hybrid framework with both informal (out-of-court) and formal (judicial) insolvency proceedings, as it empowers stakeholders to resolve the debt issue with the minimum assistance of the State.
- Under this system, the fi nancial creditors seek approval from the National Company Law Tribunal (NCLT) regarding the resolution plan and NCLT may accept or reject any application.
- The limit for a pre-pack is 120 days with 90 days available to the stakeholder in bringing the resolution plan to the NCLT.
- The plan has to be approved by a minimum of 66 percent of unrelated financial creditors to the corporate before a plan is sent to NCLT.
- The pre-pack mechanism permits the Swiss challenge for any resolution plans which proved less than full recovery of dues for operational creditors.
- It will be implemented in parallel to the Corporate Insolvency Resolution Process (CIRP).
- Unlike CIRP where a resolution professional takes control of the debtor, pre-pack allows the management of the entity to retain control.

62. Ans. (c)

- Option (c) is correct

FDI

- There are two types of foreign direct investments, i.e., Greenfield and Brownfield.
- Under the Greenfi eld FDI, a company will build its own brand new facilities and assets to set up itself.
- While, under the Brownfi eld FDI, the investing company leases or purchases an existing facility.

63. Ans. (d)

- Option d is correct.

- When India won independence in 1947, it was very backward economically and the general consensus was that the planning was required for the economic development of the country.

Option d is correct: India opted for planning at the time of independence because of the following reasons:

1. Indian leaders were inspired by the success of socialism in the Soviet Union.
2. Relying entirely on market mechanism, India would not be able to come out of low level equilibrium trap that it had fallen into.
3. Indian planners were also aware of the dearth of the private capital at the time of independence.
4. There was lack of resources and incentive for private sector to operate in the social sector where profit making was the main objective.
5. Planning was advocated to achieve social justice – reduction in poverty, tacking unemployment problem, reducing inequality etc.
6. Planning was needed to mobilize resources and its allocation to be done in the context of the overall development of the country.

64. Ans. (b)

- Option (b) is correct

Fiscal Policy Tool

- Fiscal policy is a crucial part of Indian economics. Both the executive and legislative branches of the government determine fiscal policy and use it to infl uence the economy by adjusting revenue and spending levels.
- Fiscal policy is based on the theories of British economist John Maynard Keynes, which hold that increasing or decreasing revenue (taxes) and expenditures (spending) levels infl uence infl ation, employment, and the flow of money through the economic system.
- Fiscal policy is often used in combination with monetary policy, which, in India, is set by the Reserve Bank of India to influence the direction of the economy and meet economic goals.

Repo rate

- Repo rate is a monetary tool used by the RBI to allow commercial banks to borrow money, when in need, against collaterals such as government bonds and treasury bills.
- While lending money to commercial banks, the apex bank of India charges a certain amount of interest, which is called the repo rate.

65. Ans. (c)

- Green mining is defined as technologies, best practices and mine processes that are implemented as a means to reduce the environmental impacts associated with the extraction and processing of metals and minerals.
- Examples include the reduction of greenhouse gases, selective mining approaches to reduce the ecological footprint, and reduction in chemical use.
- Recently discovered green mining technologies include mining from tailings, dust suppression techniques, liquid membrane emulsion technology, sulphuric acid leaching extraction process, impermeable tailings storage, and improved energy efficiency by using better ventilation systems and diesel engines.
- So, point 1, point 2 and point 4 are correct.
- Solvent extraction technique is associated with certain drawbacks such as large consumption of hazardous chemicals, time consuming, by-products generation, lower quality, low efficiency, not eco-friendly, degradation of thermo-sensitive bioactive

compounds, and high toxicity. So, point 3 is not correct.

- Therefore, option (c) is the correct answer.
- Relevance: Coal India Ltd (CIL) recently announced that it is looking at green mining options to lessen any adverse environmental impact by leveraging a slew of eco-friendly technologies in both underground and open cast mining.

66. Ans. (b)

- ''INFRUS'' (India-France-United States) Alliance aims to get a nuclear edge against China's growing arsenal.
- The latest idea is just as path-breaking as the 2005 India-US nuclear deal, which helped legitimise New Delhi's weapons' programme and ended the era of nuclear apartheid.
- The new deal is envisaged as an Indo-French collaboration with American help to strengthen India's sea-based nuclear deterrent, improve its nuclear attack submarine forces and counter future Chinese incursions in the Indian Ocean.
- Therefore, option (b) is the correct answer.
- Relevance: INFRUS Alliance is in news as a counter to Chinese expansionary policies in the Indo-Pacific region.

67. Ans. (d)

- Option d is correct.
- Women's Indian Association was formed on 8th May 1917 at Adyar, Chennai.
- It was one of the first Women's Association, which brought all Indian women together for mutual assistance.
- The main aim of the organization was to obtain women's franchise to represent in the local state and central legislatures and achieved it in the year 1930.
- Margaret Cousins, Kamaladevi Chattopadhyay, Annie Besant, Sarojini Naidu, Muthulakshmi Reddy, and others, set up the Women's Indian Association (WIA) at Adyar, Madras.
- On May 8, 1917 the Women's Indian Association(WIA) was established by Dorothy Jinarājadāsa, with Annie Besant as President and Margaret Cousins as the Honorable General Secretary.
- On 18 December 1917, the WIA sent a delegation led by Sarojini Naidu (1879 1949) to Edwin Montague, Secretary of State for India.
- Representing themselves as Indian women who had awakened to their civic responsibilities, they requested female suffrage on a par with men in the expanded provincial legislatures as a part of the forthcoming Government of India Act of 1919.
- Dr. Muthulakshmi Reddy became the president of Women's India Association in 1931 and President of the All- India Women's Conference in 1933.

68. Ans. (d)

- Option d is correct
- Lord William Bentinck served as Governor General of India between 1828 to 1835.
- His tenure is known for several social reforms.
- Statement 1 is correct: The social reforms of William Bentinck made his name immortal in the history of British India.
- These include the abolition of Sati (1829), the suppression of Thugi (1830) and the prevention of female infanticide.
- Statement 2 is correct: Lord William Bentinck was the first Governor-General to visualize a Russian threat to India.
- Hence, he was eager to negotiate friendly relations both with the ruler of Punjab, Maharajah Ranjit Singh and also with the Amirs of Sind.
- Thus a Treaty of 'perpetual friendship' with Ranjeet Singh was concluded by William Bentick. It is also known as Rupnagar Treaty of 1831.

- Statement 3 is correct: Under William Bentick, the four Circuit Courts were abolished and their functions transferred to collectors under the supervision of the commissioner of revenue and circuit.

69. Ans. (a)

- The Problem of Sambalpur – Towards the end of 19th century, Andrew Fraser, the Chief Commissioner of the Central Provinces, proposed an adjustment of the boundaries of Bengal and the Central Provinces, in order to solve the problem of Sambalpur, an Oriya speaking region within the Hindi speaking Central Provinces.
- The move to replace Oriya with Hindi in the Sambalpur division of the Central Provinces in 1895 led passionate protests and propaganda for the unification of the Oriya speaking regions.
- This was one of the factors which led Curzon to consider re-drawal of the boundaries of the Bengal Province.

70. Ans. (d)

- Chittagong Armoury Raid (April 1930) Surya Sen had participated in the Non-Cooperation Movement and had become a teacher in the national school in Chittagong.
- Surya Sen decided to organise an armed rebellion along with his associates.
- The raid was conducted in April 1930 and involved 65 activists under the banner of Indian Republican Army—Chittagong Branch
- There was a large-scale participation of young women.
- Prominent women revolutionaries included Pritilata Waddedar, Kalpana Dutt,Santi Ghosh, Suniti Chandheri, and Bina Das.
- Hence all of above options are correct.

71. Ans. (c)

- Due to widespread popularity of DNA based technological developments, new advances in ribonucleic acid (RNA) research often go unnoticed.
- RNA—essential for regulation and expression of genes—has already been the subject of research, in areas such as RNA interference (RNAi) and antisense technology.
- RNAi technologies are also now known to formulate drugs capable of reducing cholesterol levels by half.
- This technology finds immense importance in treating acute viral infections like acquired immunodeficiency syndrome (AIDS), perhaps because of the well-studied life cycle and pattern of gene expression of the human immunodeficiency virus (HIV).
- This technique is used for gene mapping and annotation in plants.
- RNA interference has been used for studies on multiple plant species.RNAi has been used to target specific gene, instead of silencing the entire gene,it induces sequence-specific gene silencing , sequences that can cause cancer.
- It can also be used to treat bacterial diseases, viruses, and parasites, relieve pain and even modulate sleep.
- RNAi has huge significance within the Indian context, considering the deep-seated resistance over the years to Bt cotton and other genetically modified seeds.
- RNA-reliant solutions could be a viable alternative.
- Reference:https://www.livemint.com/Opinion/qQSEpNfNPUEShuTezgvMaO/RNA-technologies-and-Indias-path-forward.html

72. Ans. (d)

- Blockchain technology is an innovation in the healthcare technology industry.
- In the United States, the Food and Drug Administration (FDA) began piloting a program to support the United States Drug Supply Chain Security Act (DSCSA).

- This was piloted to address the requirements necessary to identify, track, and trace prescription medications and vaccine distribution.
- It enables a user-centred means of gathering health information securely and ensuring that it can be verified unshared.
- Blockchain systems provide a transparent and distributed ledger of records that cannot be altered without recording a change.
- This technology is useful for providing robust safeguards for patient information as the technology can anonymize patient data while p roviding a means of distributing information across diverse and fragmented healthcare systems.
- This pilot program demonstrated the utility of blockchain in connecting disparate systems and organizations to facilitate complete product traceability.
- It also demonstrated patient safety as it reduced the time taken to inform the supply chain of a product recall, reducing it from a few days to a few seconds.
- Reference:https://www.google.com/amp/s/www.news-medical.net/amp/health/Health-Technology-Around-the-World.aspx

73. Ans. (a)

- Statement 1 is incorrect : A long winter night with clear skies is an ideal situation for temperature inversion.
- Statement 4 is incorrect : Temperature Inversion prevents thunderstorms from forming.

Temperature Inversion

- A temperature inversion is a layer in the atmosphere in which air temperature increases with height.
- An inversion is present in the lower part of a cap.
- The cap is a layer of relatively warm air aloft (above the inversion).
- Air parcels rising into this layer become cooler than the surrounding environment, which inhibits their ability to ascend.
- A long winter night with clear skies is an ideal situation for temperature inversion.
- Over polar areas, temperature inversion is normal throughout the year.
- The inversion takes place in hills and mountains duo to air drainage.
- This can cause several weather-related effects.
- One is the trapping of pollutants below the inversion, allowing them to build up.
- If the sky is very hazy, or is sunsets are very red, there is likely an inversion somewhere in the lower atmosphere.
- This happens more frequently in high pressure zones, where the gradual sinking of air in the high pressure dome typically causes an inversion to form at the base of a sinking layer of air.
- Another effect that an inversion has is to make clouds just below the inversion to spread out and take on a flattened appearance.
- For instance, marine stratocumulus clouds over cold ocean waters; or the tops of thunderstorms when they reach the base of the stratosphere, which also forms a temperature inversion.
- Still another effect is to prevent thunderstorms from forming.
- Even in an air mass that is hot and humid in the lowest layers, thunderstorms will be prevented if an inversion in the lower atmosphere is keeping this air from rising.
- The conceptual opposite of a temperature inversion is an unstable air layer.

74. Ans. (a)

- Option (a) is correct.

North Atlantic Ocean Currents

Cayenne Current

- In the North Atlantic Ocean, the Cayenne current is joined and reinforced by the North Equatorial Current.
- This current heads north-westwards as a large mass of equatorial water into the Caribbean sea.
- This current is further split into two currents: The Florida current and The Gulf Stream.
- All of these currents are warm currents.

Florida Current

- One part of the Cayenne current enters the Gulf of Mexico and emerges from the Florida Strait between Florida and Cuba.

Gulf Stream

- Another part of the Cayenne current heads northwards east of the Antilles as the Gulf Stream.
- The Gulf Stream is one of the strongest ocean currents.

North Atlantic Drift

- The Gulf Stream is defl ected eastwards under the combined infl uence of the Westerlies and the rotation of the Earth.
- This reached Europe as the North Atlantic Drift.
- Since this drift carries warm equatorial water into the high latitudes of Europe, it keeps the coasts of North Sea frost free facilitating suitable conditions for ports.

Canaries Current

- It flows southwards along the coasts of Europe and Africa, to finally merge with the North Equatorial Current.
- Since it receives water from the Polar Regions, it is a cold current.

Labrador Current

- This current drifts south-eastwards between West Greenland and Baffin Island of Canada.
- This cold current meets the warm Gulf Stream off Newfoundland of Canada.

Irminger Current

- It is also called East Greenland Current.
- It flows between Iceland and Greenland and cools the North Atlantic Drift at the point of Convergence.

75. Ans. (d)

- Statement 1 is incorrect: Bharner and Kaimur hills form the eastern part of the Vindhyan Range.
- Statement 2 is incorrect: Dhupgarh (1,350 m) near Pachmarhi on Mahadev Hills is the highest peak of Satpura.
- Statement 3 is incorrect : Tapti River originates in the Betul plateau.

Hill Ranges of Indian Peninsular Plateau

Hill Ranges of Indian Peninsular Plateau are

1. The Aravalli Range,
2. The Vindhyan Range,
3. The Satpura Range,
4. The Western Ghats (or the Sahyadris),
5. The Eastern Ghats.

- Most of these hills are of the relict type, being remnants of the originally higher hills.
- Aravalli are the oldest fold mountains in India.
- The Vindhyan Range rises as an escarpment flanking the northern edge of the Narmada-Son Trough overlooking the Narmada valley.
- It runs more or less parallel to the Narmada Valley in an east-west direction.
- The western part of this range is covered with lava while the eastern part extends as the Bharner and Kaimur hills.
- The Satpura Range: 'Sat' means seven and 'pura' means mountains.

- Therefore, the Satpura range is a series of seven mountains.
- It runs in an east-west direction south of the Vindhyas and in between the Narmada and the Tapi, roughly parallel to these rivers.
- Dhupgarh (1,350 m) near Pachmarhi on Mahadev Hills is the highest peak of Satpura.
- Tapti River originates in the Betul plateau and Narmada River takes its birth in Amarkantak plateau.

76. Ans. (a)

- Statement 1 is correct: The Barak sub-basin drains areas in India, Bangladesh and Myanmar.
- It rises from the Manipur hills and then flows along Nagaland-Manipur border and enters Assam.
- It further enters Bangladesh.
- Statement 2 is correct: Barail range separates it from the Brahmaputra basin on the north.
- Statement 3 is incorrect : The Meghna is formed due to the confluence of the Surma and Kushiyara rivers, before Padma (combined flow of Ganga and Brahmaputra) joins it.

Barak (Meghna) River

- The basin covers parts of India, Bangladesh and Myanmar.
- In India it spreads over states of Meghalaya, Manipur, Mizoram, Assam, Tripura and Nagaland having an area of 41,723 Sq.km which is nearly 1.38% of the total geographical area of the country.
- The basin extends between 89°50’ to 94°0’ east longitudes and 22°44’ to 25°58’ north latitudes with maximum length and width of 460 km and 350 km.
- It is bounded by the Barail range separating it from the Brahmaputra basin on the north, by the Naga and Lushai hills on the east and by Mizo hills and territory of Bangladesh on the south and west.
- The Barak River rises from the Manipur hills, south of Mao in Senapati district of Manipur at an elevation of 2,331 m.
- It flows then along Nagaland-Manipur border through hilly terrains and enters Assam.
- It further enters Bangladesh where it is known by the name of the Surma and the Kushiyara (both are distributaries of Barak) and later called the Meghna before receiving the combined flow of the Ganga and the Brahmaputra (Padma).
- The length of the Barak River from its origin upto the border of Assam along the Kushiyara is 564 km.
- The principal tributaries of Barak joining from north bank are the Jiri, the Chiri, the Modhura, the Jatinga, the Harang, the Kalain and the Gumra whereas the Dhaleswari, the Singla, the Longai, the Sonai and the Katakhal joins from south bank.

77. Ans. (c)

- Statement 1 is incorrect: The Hasdeo Aranya forests are called the lungs of Chhattisgarh.
- The Hasdeo Aranya Region (Aranya means forest) lies in the catchment area of the Hasdeo river in North-Central Chhattisgarh.
- The Hasdeo River is a tributary of the Mahanadi river which originates in Chhattisgarh and flows through Odisha into the Bay of Bengal.
- The Hasdeo forests are also the catchment area for the Hasdeo Bango Dam built across the Hasdeo river which irrigates six lakh acres of land, crucial to a State with paddy as its main crop.
- Statement 2 is correct: The forests are ecologically sensitive due to the rich biodiversity and presence of a large migratory corridor for elephants (Lemru Elephant Reserve) stretching from supporting the migration of wild elephants from Gumla district in Jharkhand to Korba district of Chhattisgarh.

- It lies on top of the Hasdeo coalfield, which represents one of the largest coal reserves in India, having estimated reserves of 5.18 billion tonnes of coal.
- It is one of the largest intact forest areas in Central India outside of the protected area system.
- Statement 3 is correct: In the year 2010, the Center categorized Hasdeo Aranya to be a "no-go" zone for mining.
- Hasdeo represents one of the largest coal reserves in India, having estimated reserves of 5.18 billion tonnes of coal.
- There are more than 20 known coal mines on the Hasdeo reserve.
- After a joint study in 2010, the Ministry of Coal and the Ministry of Forest and Environment deemed the Hasdeo reserve a 'No Go Area,' prohibiting any sort of mining due to its rich biodiversity and exceptional ecology.
- Interestingly, the Parsa East Kente Basan coal mine was permitted within a year after the prohibition, based on a goal of extracting as much coal as possible at the lowest possible cost.
- After the gram sabhas opposed mining in the Madanpur South and Gidmedi Paturia blocks that were allotted to the Andhra Pradesh Mineral Development Company (APMDC) and Chhattisgarh State Power Generation Company (CSPGC) respectively, clearances were withdrawn.
- Reference:https://www.thehindu.com/news/explained-the-coal-mining-protests-in-the-hasdeo-aranya-region/article65726814.ece

78. Ans. (b)

- Statement 1 is incorrect: Loktak is the largest freshwater lake in Manipur, Northeast India.
- Lake is one of the most popular tourist attractions in Manipur.
- The lake invites tourists from far and wide for its ethereal beauty.
- One of the largest water bodies in Asia and its beauty, greenery, marine life, surrounded by blue mountains stand out.
- Loktak lake was initially designated as a wetland of international importance under the Ramsar Convention in 1990.
- Later it was also listed under the Montreux Record in 1993.
- The etymology of Loktak is Lok = "stream" and tak = "the end".
- This ancient lake plays an important role in the economy of Manipur.
- It serves as a source of water for hydropower generation, irrigation and drinking water supply.
- Statement 2 is correct: The lake houses the only floating national park in the world, the Keibul Lamjao National Park, which is the last refuge of the endangered brow-antlered deer or sangai, Manipur's state animal.
- It is famous for the phumdis floating over it. Phumdis are a series of floating islands of entangled vegetation formed by the accumulation of organic debris and biomass with soil, exclusive to the Loktak Lake in Manipur.
- Its thickness varies from a few centimeters to two meters.
- The humus of phumdi is black in colour and very spongy with a large number of pores.
- It floats with 4/5 parts under water.
- In addition, the lake shelters about 230 species of aquatic plants, 100 types of birds, and 400 species of fauna like barking deer, sambar, and Indian python.
- Statement 3 is correct: Instead of Carbon Dioxide, Nitrogen is a major pollutant.
- The pH of the lake, as per measurements so far, varies from 6.8-7.2 (ideally the pH of a healthy lake should be slightly below 7).
- However, studies of ocean acidification have shown that even a 0.1 increase in pH can cause (harmful) decalcification.

Major Effects of pollution in Loktak Lake are:

Calcium anomalies:

- There are signs of calcium anomalies in some of the mollusks and other aquatic life in the lake.
- This is similar to the phenomenon of coral bleaching in oceans, where rising sea surface temperature causes organisms that live on corals to disengage, thereby killing the corals themselves.

Effect on Phumdis:

- The health of the lake also affects the Phumdis (the unique 'floating islands') of the Loktak lake.
- These islands are made of a mix of vegetation and soil.
- These coalesce to form a thick mat that, for centuries, have hosted huts and fishing settlements.
- Reference:https://www.downtoearth.org.in/news/environment/manipur-govt-orders-floating-homestays-off-loktak-locals-demand-rollback-84047

79. Ans. (d)

- Statement 1 is correct: The Vice President acts as the President, if a vacancy is caused because of resignation or removal or death of the President.
- According to the Constitution, the Vice President functions as ex-officio Chairman of Rajya Sabha. Being ex-officio Chairman means that he/she is the Chairman in the capacity of being the Vice President.
- Statement 2 is correct: He/She is elected by an electoral college which consists of the members of both Houses of the Parliament including the nominated members.
- Statement 3 is correct: He/She is elected according to the system of proportional representation by means of a single transferrable vote, and the voting is by secret ballot.
- The qualifications for being a Vice President are the same as prescribed for the office of the President.

80. Ans. (d)

- All statements are correct
- Central Vigilance Commission (CVC) CVC falls under the Ministry of Personnel.
- It is the main agency for preventing corruption in the Central Government.
- It is a statutory body, which composed of chairperson and 2 Vigilance Commissioners.

The Central Vigilance Commission has identified the following modes of corruption:

- Acceptance of substandard stores/works.
- Misappropriation of public money and misappropriation of stores.
- Incurring pecuniary obligations of persons with whom the public servants have offi cial dealings.
- Borrowings money from contractors/firms having official dealings with officers.
- Showing favors to contractors and firms.
- Losses to the government by negligence or otherwise.
- Claiming of false traveling allowance, house rent, etc.
- Possession of disproportionate assets.
- Causing loss to the government by negligence or otherwise.
- Production of forged certificate of age of birth/community.
- Purchase of immovable property, etc. without prior permission or intimation.
- Abuse of official position/powers.
- Acceptance of gifts.

81. Ans. (d)

- Option (d) is incorrect: The electoral franchise was still limited to about 10% of the population.

Government of India act 1935

- The Government of India Act 1935 contemplated the establishment of an All-India Federation in which Governors' Provinces and the Chief Commissioners' Provinces and those Indian states which might accede to be united were to be included.
- Dyarchy was provided for in the Federal Executive.
- The Federal Legislature was to have two chambers (bicameral)—the Council of States and the Federal Legislative Assembly.
- It provided for three subject- lists—the Federal Legislative List, the Provincial Legislative List and the Concurrent Legislative List.
- Residuary legislative powers were subject to the discretion of the governor-general.
- Dyarchy in the provinces was abolished and provinces were given autonomy, i.e., the distinction between Reserved and Transferred Subjects was abolished and full responsible government was established, subject to certain safeguards.
- Provinces derived their power and authority directly from the British Crown.
- Provincial legislatures were further expanded.
- The principles of 'communal electorates' and 'weightage' were further extended to depressed classes, women and labour.
- Franchise was extended, with about 10 per cent of the total population getting the right to vote.
- The India Council of the Secretary of State was abolished.
- The 1935 Act recommended the establishment of a Federal Public Service Commission and Provincial Public Service Commission under their spheres.

82. Ans. (c)

- Statement 4 is incorrect: Increase in public investment especially in infrastructure, which includes irrigation, power, roads, market linkages and research and extension would benefi t the agriculture sector
- Liberalisation, Privatisation, and Globalisation (LPG) Reforms in Agriculture LPG Reforms have not been able to benefit agriculture, where the growth rate has been decelerating.
- Public investment in the agriculture sector especially in infrastructure, which includes irrigation, power, roads, market linkages and research and extension (which played a crucial role in the Green Revolution), has fallen in the reform period.
- Further, the removal of fertilizer subsidy has led to an increase in the cost of production, which has severely affected the small and marginal farmers.
- This sector has been experiencing a number of policy changes such as the reduction in import duties on agricultural products, removal of minimum support price and lifting of quantitative restrictions on agricultural products; these have adversely affected Indian farmers as they have to face increased international competition.
- Moreover, because of export-oriented policy strategies in agriculture, there has been a shift from production for the domestic market towards production for the export market focusing on cash crops in lieu of production of food grains. This puts pressure on the prices of food grains.

83. Ans. (b)

- Option (b) is correct

Dedicated Freight Corridor (DFC)

- DFC is a high speed and high capacity railway corridor that is exclusively meant for the transportation of freight, or in other words, goods and commodities.
- It involves the seamless integration of better infrastructure and state of the art technology.

- Recently, the Prime Minister of India has inaugurated a 351-km section of the Eastern Dedicated Freight Corridor (EDFC) and an Operation Control Centre (OCC) between Khurja and Bhaupur in Uttar Pradesh.
- EDFC is a 1,839-km project billed as the largest rail infrastructure being built in independent India and has been in the making since 2006.
- The DFC consists of two arms. The section launched recently is part of the 1,839-km Eastern DFC that starts at Sohnewal (Ludhiana) in Punjab and ends at Dankuni in West Bengal.
- The other arm is the around 1,500-km Western DFC from Dadri in Uttar Pradesh to JNPT in Mumbai, touching all major ports along the way.

Eastern DFC	
States	**KMs**
Punjab	88
Haryana	72
Uttar Pradesh	1058
Bihar	239
Jharkhand	196
West Bengal	203
Total	**1856**

84. Ans. (d)

- The power of the State governments to make laws on "betting and gambling" can be traced to Entry 34 List II (State List) of the Seventh Schedule of the Constitution.
- Thus, the States have exclusive power to make laws on this subject including power to prohibit or regulate gambling etc. in their respective territorial jurisdiction. So, statement 1 is correct.
- The Supreme Court (SC) of India held that a State legislature has the right to impose tax on lotteries conducted by other States within its jurisdiction.
- It observed that 'lotteries', conducted or organized or authorised by the Government of India or the Government of State, is a "species of gambling activity".
- Therefore, State legislatures have the power to tax lotteries under Entry 62 of the State List. So, statement 2 is correct.
- According to Entry 40 of List I (Union List), the Parliament has the power to legislate on 'Lotteries organized by the Government of India as well as the Government of any State'.
- Therefore, Lottery Regulation Act, 1998 was enacted which gives powers to States to organize, conduct or promote a lottery, conduct the draws of all the lotteries located within the State concerned. So, statement 3 is correct.
- Therefore, option (d) is the correct answer.

85. Ans. (b)

Gandhi's Eleven Demands

- To carry forward the mandate given by the Lahore Congress, Gandhi presented eleven demands to the government and gave an ultimatum of January 31, 1930 to accept or reject these demands.

The demands were as follows.

Issues of General Interest

1. Reduce expenditure on Army and civil services by 50 per cent.
2. Introduce total prohibition.
3. Carry out reforms in Criminal Investigation Department (CID).
4. Change Arms Act allowing popular control of issue of firearms licences.
5. Release political prisoners.
6. Accept Postal Reservation Bill.

Specific Bourgeois Demands

7. Reduce rupee-sterling exchange ratio to 1s 4d

8. Introduce textile protection.
9. Reserve coastal shipping for Indians.

Specific Peasant Demands

10. Reduce land revenue by 50 per cent.
11. Abolish salt tax and government's salt monopoly.

With no positive response forthcoming from the government on these demands, the Congress Working Committee invested Gandhi with full powers to launch the Civil Disobedience Movement at a time and place of his choice.

86. Ans. (d)

- All the statements given above are correct.

Cripps Mission:

- In the midst of worsening wartime international situation, the British Government in its continued effort to secure Indian cooperation sent Sir Stafford Cripps to India on 23 March 1942. This is known as Cripps Mission.

The main proposals of the mission were as follows:

1. An Indian Union with a dominion status would be set up; it would be free to decide its relations with the Commonwealth and free to participate in the United Nations and other international bodies.
2. After the end of the war, a constituent assembly would be convened to frame a new constitution. Members of this assembly would be partly elected by the provincial assemblies through proportional representation and partly nominated by the princes.
3. The British government would accept the new constitution subject to two conditions:
   (i) any province not willing to join the Union could have a separate constitution and form a separate Union, and
   (ii) the new constitution making body and the British government would negotiate a treaty to effect the transfer of power and to safeguard racial and religious minorities.

- In the meantime, defence of India would remain in British hands and the governor general's powers would remain intact. Departures from the Past and Implications The proposals differed from those offered in the past in many respects—
- The making of the constitution was to be solely in Indian hands now (and not 'mainly' in Indian hands—as contained in the August Offer).
- A concrete plan was provided for the constituent assembly.
- Option was available to any province to have a separate constitution—a blueprint for India's partition.
- Free India could withdraw from the Commonwealth.
- Indians were allowed a large share in the administration in the interim period.

87. Ans. (c)

- Statement 1 is incorrect: In political percepts, Ambedkar believed in freedom of religion, free citizenship and separation of State and religion.
- Gandhi also endorsed the idea of freedom of religion, but never approved a separation of politics and religion.
- But religion as an agent of social change was well accepted by both leaders.

Important Personalities

Sardar Vallabhbhai Patel:

- He dominated Indian politics from 1917 to 1950.
- Self- reliance was among the chief tenets of his economic philosophy, on which, his views were closer to those of Pandit

Jawaharlal Nehru than Mahatma Gandhi's, who championed self- sufficiency at the village level.

- The role he envisaged for the government was that of a welfare state, but realized that other countries had taken up the task at more advanced stages of development.
- He was unimpressed with the slogans raised for socialism, and spoke often of the need for India to create wealth before debating over what to do with it, how to share it.
- He rejected nationalization completely; clear that industry ought to be the sole preserve of the business community.
- Nor was he a great believer in planning, especially of the kind practiced in the developed and industrialized countries.
- He was not for controls. The indifference was, in part, because there simply wasn't enough staff to implement them.
- He was working with an administration capacity depleted owing to the departure of a disproportionate number of offi cers that had opted to go to Pakistan and the posting of senior civil servants in the newly-established embassies across the world.
- To him, the profi t motive was a great stimulant to exertion, not a stigma.
- He wholly approved of it, and advocated it for even the non-capitalist classes, the middle classes, the labour and even the agriculturists.
- That does not mean he did not recognize concentration of wealth as a social problem and unethical.

Lala Lajpat Rai:

- He was a prominent nationalist leader whose fierce brand of patriotism and potent vocalism against the British rule earned him the title of 'Punjab Kesari' or the Lion of the Punjab.
- He also initiated the foundation of Punjab National Bank.
- He went to Britain in 1914 and then to the USA in 1917.
- In October 1917, he founded the Indian Home Rule League of America in New York.
- He stayed in the USA from 1917 to 1920.
- In 1920, after his return from America, Lajpat Rai was invited to preside over the special session of the Congress in Calcutta.
- He was the first President of All India Trade Union Congress (AITUC) which led the trade union movement.
- His proposal for "a clear partition of India into a Muslim India and non-Muslim India" on December14, 1924, in The Tribune, met with major controversy.

Dr. B. R. Ambedkar:

- He shared a lot of ideological differences with Gandhi.
- Dr. Ambedkar advocated parliamentary system of government for independent India, but Gandhi had very little respect for the parliamentary system of governance.
- Gandhi believed that democracy tends to get converted into mass democracy with a propensity for domination by leaders.
- Dr. Ambedkar was inclined towards mass democracy as it could act as a pressure on the government with the advancement of the oppressed people.
- Gandhi distinguished between abolition of untouchability and abolition of caste system as such.
- On this point he differed from Ambedkar who advocated annihilation of the caste system to remove untouchability.
- Gandhi felt that whatever the limitations and defects of the varnashram system, there was nothing sinful about it, as there was about untouchability.
- Dr. Ambedkar believed in purity of ends and justified means as just when the ends were just whereas in Gandhian perception it was purity of means that determined the end.

88. Ans. (a)

- Statement 1 is correct: Polar amplification happens when changes to the earth's atmosphere lead to a larger difference in temperature near the north and south poles than to the rest of the world.
- This phenomenon is measured against the average temperature change of the planet.
- These changes are more pronounced at the northern latitudes and are known as the Arctic amplification.
- It occurs when the atmosphere's net radiation balance is affected by an increase in greenhouse gasses.
- The Arctic is warming 2-3 times as fast as the global rate due to the unique features in the Arctic climate system.
- Statement 2 is correct:

Main factors contributing to Arctic Amplification are as following:

- Sea ice loss is the dominant driver: Sea ice and snow have high albedo implying that they are capable of reflecting most of the solar radiation as opposed to water and land.
- As the sea ice melts,resulting in the low albedo, the Arctic Ocean will be more capable of absorbing solar radiation, thereby driving the amplification.
- The lapse rate or the rate at which the temperature drops with elevation, decreases with warming.
- Studies show that the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.
- Some additional factors include increases in radiation from greenhouse gasses, atmospheric water vapor, and cloud cover as well as changes in ocean heat content and atmospheric circulation patterns.
- Statement 3 is incorrect: According to the World Meteorological Organization's (WMO) report, 'State of Global Climate in 2021', sea level along the Indian coast is rising faster than the global average rate.
- One of the primary reasons for this rise is the melting of sea ice in the polar regions, especially the Arctic.
- A group of Indian and Norwegian scientists published a study titled 'A possible relation between Arctic Sea ice and late season Indian Summer Monsoon Rainfall extremes.'
- The study found that the reduced sea ice in the Barents-Kara Sea region can lead to extreme rainfall events.
- Reference:https://www.thehindu.com/specials/text-and-context/explained-what-is-causing-arctic-warming-should-india-be-worried/article65778586.ece

89. Ans. (a)

- Option A is correct: This year, for the first time in its centuries-long history, Iraq Lake Sawa dried up.
- A combination of mismanagement by local investors, government neglect and climate change has ground down its azure shores to chunks of salt.
- The Sawa Lake, a biodiverse wetland situated near the city of Samawa, south of the capital Baghdad, Iraq.
- Lake Urmia is a saltwater lake. It is situated in the mountains of northwest Iran i.e the west of the southern portion of the Caspian Sea and is fed by 13 rivers.
- It is designated as a site of international importance under the UN Convention on Wetlands.
- The lake has been shrinking since 1995, due to a combination of prolonged drought, elevated summer temperatures that speed up evaporation, over-farming and dams.
- It became one of the worst ecological disasters of recent decades as the lake's surface, which was 2,366 km2 in 2011 shrank to just 700 km2 in 2013.
- This has threatened the habitat of shrimp, flamingos, deers and wild sheep and caused

salt storms that pollute nearby cities and farms.

- It has started stabilizing in recent times after the implementation of a joint program between Iran and the UNDP.
- Lake Superior, most northwesterly and largest of the five Great Lakes of North America and one of the world's largest bodies of fresh water.
- Situated in south-east Siberia, the 3.15-million-ha Lake Baikal is the oldest (25 million years) and deepest (1,700 m) lake in the world.
- Reference:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6556201/

90. Ans. (b)

- Statement 1 is incorrect: It is a primitive and hazardous method of mining for coal.
- It involves digging of very small narrow tunnels (hence called rat holes), usually 3-4 feet high, which workers (more often children)enter and extract coal.
- The rat-hole mining is broadly of two types - side-cutting and box-cutting. In a side-cutting procedure, narrow tunnels are dug on the hill slopes and workers go inside until they find the coal seam.
- The coal seam in the hills of Meghalaya is very thin, less than 2 m in most cases.
- In the box-cutting type, a rectangular opening is made, varying from 10 to 100 sqm.
- Through this, a vertical pit, 100 to 400 feet deep, is dug. Once the coal seam is found, rat-hole-sized tunnels are dug horizontally through which workers can extract the coal.
- The Mines and Minerals (Development and Regulation) Amendment Bill, 2021 was passed in both Houses of Parliament.
- The Bill amends the Mines and Minerals (Development and Regulation) Act, 1957.
- The Act regulates the mining sector in India.
- Statement 2 is correct: Rat-hole mining degrades water quality with a high concentration of sulfates, iron and toxic heavy metals, low dissolved oxygen (DO), and high BOD.
- Areas around mines are used for piling of coal, which has become a major source of air, water, and soil pollution.
- Off-road movement of coal trucks and other vehicles in the mining area causes further damage to the ecology of the area.
- The National Green Tribunal (NGT) banned it in 2014.
- Statement 3 is correct: It is practiced mostly in Northeastern states, especially in Meghalaya because coal seam found in the hilly region is very thin, less than 2 m in most cases.
- In Jharkhand, the coal layer is extremely thick, where open-cast mining can be done.
- But no other method would be economically viable in Meghalaya, where the coal seam is extremely thin.
- Removal of rocks from the hilly terrain and putting up pillars inside the mine to prevent collapse would be costlier.
- So despite a ban, rat-hole mining remains the prevalent procedure for coal mining in Meghalaya.
- Rat-hole mining is the locally developed technique and the most commonly used one.
- It is not regulated by any law, and coal extraction has been made by unscrupulous elements in a most illegal and unscientific manner.
- Meghalaya's annual coal production of nearly 6 million tonnes is mostly said to have come through rat-hole mining.
- Reference:https://prsindia.org/billtrack/the-mines-and-minerals-development-and-regulation-amendment-bill-2021

91. Ans. (b)

- Option (b) is correct

Formation of the North-East Monsoon

- The north-east monsoon, commonly known as winter monsoon blows from land to sea.
- As the Sun moves southwards due to which, the following phenomena occur.
- ITCZ moves southward.
- Formation of the High-Pressure belt over Tibet due to cooling of the Plateau.
- This leads to the end of the Somali Jet and Tropical Easterly Jet stream.
- Subtropical Jetstream returns back in its original position i.e. over Indian Peninsula, south of the Himalayas.
- The Walker Cell, which was formed and strong in summer, gets weakened.
- All these factors aid the movement of the North-East Trade wind and cold air mass from the Siberia and Tibet into India and the Bay of Bengal.
- This is called North-East Monsoon (due to reversal of wind).
- This cold and moisture-free wind when blows over the Bay of Bengal, its humidity increases and thus the rainfall over Tamil Nadu.

92. Ans. (a)

- Option (a) is correct

Factors Determining the Climate of India

India's climate is controlled by a number of factors which are as following:

- Latitudinal location
- Distance from the Sea
- The Himalayas
- Physiography
- Monsoon Winds
- Upper Air Circulation
- El Nino and La Nina
- Tropical Cyclones and Western Disturbances
- The Tropic of Cancer passes through the central part of India in east-west direction.
- Thus, northern part of the India lies in sub-tropical and temperate zone and the part lying south of the Tropic of Cancer falls in the tropical zone.
- The tropical zone being nearer to the equator, experiences high temperatures throughout the year with small daily and annual range.
- Area north of the Tropic of Cancer being away from the equator, experiences extreme climate with high daily and annual range of temperature.
- The Himalayan Mountains: The towering mountain chain provides an invincible shield to protect the subcontinent from the cold northern winds.
- Rivers do not determine the climate of India.

93. Ans. (d)

- All statements are correct

Location of Industries

- Industries maximise profi ts by reducing costs.
- Therefore, industries should be located at points where the production costs are minimum.
- Some of the factors infl uencing industrial locations are as under:
- Access to Market: 'Market' means people who have a demand for these goods and also have the purchasing power (ability to purchase) to be able to purchase from the sellers at a place.
- Remote areas inhabited by a few people offer small markets.
- The developed regions of Europe, North America, Japan and Australia provide large global markets as the purchasing power of the people is very high.
- The densely populated regions of South and South-east Asia also provide large markets.
- Access to Raw Material: Industries based on cheap, bulky and weight- losing material (ores) are located close to the sources of

raw material such as steel, sugar, and cement industries.
- Perishability is a vital factor for the industry to be located closer to the source of the raw material.
- Agro-processing and dairy products are processed close to the sources of farm produce or milk supply respectively.
- Access to Labour Supply: Labour supply is an important factor in the location of industries.
- Some types of manufacturing still require skilled labour.
- Increasing mechanisation, automation and flexibility of industrial processes have reduced the dependence of industry upon the labours.

Access to Sources of Energy:
- Industries which use more power are located close to the source of the energy supply such as the aluminium industry.
- Earlier coal was the main source of energy, today hydroelectricity and petroleum are also important sources of energy for many industries.

Access to Transportation and Communication:
- Facilities Speedy and efficient transport facilities to carry raw materials to the factory and to move finished goods to the market are essential for the development of industries.
- Modern industry is inseparably tied to transportation systems.

Government Policy:
- Governments adopt 'regional policies' to promote 'balanced' economic development and hence set up industries in particular areas.
- Access to Agglomeration Economies/Links between Industries Many industries benefit from nearness to a leader-industry and other industries.
- These benefits are termed as agglomeration economies.

Foot Loose Industries:
- Foot loose industries can be located in a wide variety of places.
- They are not dependent on any specific raw material, weight losing or otherwise.
- They largely depend on component parts which can be obtained anywhere.
- They produce in small quantity and also employ a small labour force.
- These are generally not polluting industries.
- The important factor in their location is accessibility by road network.

94. Ans. (d)
- Option d is the correct answer.
- Gross domestic product (GDP) is the standard measure of the value added created through the production of goods and services in a country during a certain period.
- GDP is a useful measure of economic progress but not economic, social, and environmental welfare.
- Statement 1 is correct. The rise in GDP of the country may not result in the rise of the welfare of society because the rise in GDP may be concentrated in the hands of very few individuals or firms.
- For the rest, the income may in fact have fallen.
- In such a case the welfare of the entire country cannot be said to have increased.
- Statement 2 is incorrect. GDP does not tell anything about the actual distribution or distribution of income.
- To that extent, GDP estimates may not be extremely useful, especially if there is a highly skewed income distribution favouring the rich in an economy.
- Hence GDP is not a suitable indicator to economic welfare of a nation completely.

- Statement 3 is correct. Many activities and exchanges systems in an economy are not evaluated in monetary terms and hence are not registered as part of economic activity.
- In developing countries, where many remote regions are underdeveloped, where such activities and informal exchanges do take place, but are not counted in the GDPs of these countries is a case of underestimation of GDP.
- Hence GDP calculated in the standard manner may not give us a clear indication of the productive activity and well-being of a country.
- Statement 4 is correct. Externalities refer to the benefits for harms a firm or an Individual causes to another for which they are not penalised.
- Externalities do not have any market in which they can be bought and sold.
- There may be increase in output with an increase in environmental degradation which is an example of negative externality.
- Having higher GDP does not mean that people have better quality of life if water, air etc. are more polluted.
- Hence, if we take GDP as a measure of welfare of the economy, we shall be overestimating the actual welfare.
- There can be cases of positive externalities as well.
- In such cases GDP will underestimate the actual welfare of the economy.

95. Ans. (d)

- Option d is correct.
- Statement 1 is correct. When there is a balance of payment crisis in the economy then RBI can intervene in the market to "artificially stabilize" the rupee at a specific level.
- As per the "New Monetary Framework" (NMF), the RBI has the mandate to control the BoP crisis through price stability or inflation targeting.
- Statement 2 is correct. Masala bonds are bonds issued by an organization outside India but denominated in Indian rupees, rather than the local foreign currency.
- When these bonds are issued then it boosts the "confidence" of the investors in Indian economy.
- The issuance of masala bonds helps in favorable balance of payment.
- Statement 3 is correct. Raising of interest rates in the economy will help in savings of the government and result in favorable balance of payments.
- The higher interest rates mean higher borrowing costs, resulting in decrease in demand and eventually less spending by the people.
- The demand for goods and services will then drop, which reduces imports.
- Source:https://www.financialexpress.com/opinion/policy-solutions-to-indias-balance-of-payment-crisis/1316905/

96. Ans. (d)

- Option d is the correct answer.
- Government budget is an annual financial statement of estimated receipts and expenditure of the government during a fiscal year, as recorded in Article 112 of the Indian Constitution.

The following are the objectives of Government Budget:

- Statement 1 is correct. Reallocation of resources- Through a budget, the government endeavors to equally allocate resources and wealth.

The government can redistribute resources through:

1. **Taxes: -** By imposing higher taxes on the richer section and lower taxes on the low earning groups. Also, the Governments can impose higher taxes on production of harmful goods and services like liquor

cigarettes etc. Taxes can be reduced on welfare goods and services.

2. **Subsidies: -** The low-income group should be given subsidies and concession subsidies can also be given on products to encourage their use. e.g L P G
3. **Direct production: -** When the private sector doesn't take initiative for welfare activities then the government can undertake production directly. Statement 2 is correct.

Reducing inequalities in income and wealth:

- Economic inequality is an inherent part of every economic system. Government aims to reduce such inequalities of income and wealth, through its budgetary policy.
- Government aims to influence distribution of income by imposing taxes on the rich and spending more on the welfare of the poor.
- It will reduce income of the rich and raise standard of living of the poor, thus reducing inequalities in the distribution of income.
- Statement 3 is correct.

Reducing regional disparities:

- The government budget aims to reduce regional disparities through its taxation and expenditure policy for encouraging setting up of production units in economically backward regions.
- Various types of tax concessions and tax holidays are offered to those firms who volunteer for such initiatives.
- Statement 4 is incorrect. To increase the money supply in Economy is not the objective of a budget.
- Money supply can be influenced by monetary authority like RBI.
- It is part of Monetary policy of a country and not the budget.
- In the beginning of every year, the Government of India prepares a document and presents it before Lok Sabha. It contains anticipated revenues and proposed spending for the upcoming financial year (which starts from 1st April and extends till 31st March of following year).
- **Source:** https://ncert.nic.in/textbook/pdf/leec105.pdf
- https://www.businessinsider.in/budget-what-objectives-does-a-government-budget-serves/articleshow/67699696.cms

97. Ans. (b)

- The provisions of the Constitution which are related to the federal structure of the polity can be amended by a special majority of the Parliament and also with the consent of half of the State Legislatures by a simple majority.

The following provisions can be amended in this way:

- Election of the President and its manner
- Extent of the executive power of the Union and the States
- Supreme Court and High Courts
- Distribution of legislative powers between the Union and the States
- Goods and Services Tax Council. So, point 4 is correct.
- Any of the lists in the Seventh Schedule
- Representation of states in Parliament Power of Parliament to amend the Constitution and its procedure (Article 368 itself). So, point 2 is correct.
- Formation of new States and alteration of areas, boundaries or names of existing States and Elections to Parliament and State Legislatures require simple majority of the Parliament for being amended.
- Notably, these amendments are not deemed to be amendments of the Constitution for the purposes of Article 368. So, point 1 and point 5 are not correct.
- Amending the Fundamental Rights only requires special majority of the Parliament. So, point 3 is not correct.
- Therefore, option (b) is the correct answer.

98. Ans. (b)

- A Public Interest Litigation (PIL) in simple words, means, litigation filed in a court of law, for the protection of Public Interest.
- Public interest litigation is not defined in any statute or in any act.
- It has been interpreted by judges to consider the intent of public at large.
- Public Interest Litigation petition is filed in the same manner, as a writ petition is filed.
- A PIL can be filed before the Supreme Court under Article 32 of the Constitution or before the High Court of a State under Article 226 of the Constitution under their respective Writ Jurisdictions. So, statement 1 is correct.
- Public interest litigation is not defined in any statute or in any act.
- It has been interpreted by judges to consider the intent of public at large.
- Although, the main and only focus of such litigation is only Public Interest there are various areas where a Public interest litigation can be filed. So, statement 2 is correct.
- PIL is brought before the Court not for the purpose of enforcing the right of one individual against another as happens in the case of ordinary litigation, but it is intended to promote and vindicate public interest.
- The introduction of PIL in India was facilitated by the relaxation of the traditional rule of 'locus standi'.
- According to this rule, only that person whose rights are infringed alone can move the court for remedies, whereas, the PIL is an exception to this traditional rule.
- Under the PIL, any public-spirited citizen or a social organisation can move the court for the enforcement of the rights of any person or group of persons who because of their poverty or ignorance or socially or economically disadvantaged position are themselves unable to approach the court for the remedies. So, statement 3 is not correct.
- Therefore, option (b) is the correct answer.

99. Ans. (c)

- Option c is the correct answer.
- Statement 1 is incorrect: The Constituent Assembly was constituted in November 1946 under the scheme formulated by the Cabinet Mission Plan.
- Statement 2 is correct: The Socialists were initially unwilling to join, for they believed the Constituent Assembly was a creation of the British, and therefore incapable of being truly autonomous.
- Statement 3 is incorrect: In 1934 the idea of a Constituent Assembly for India was put forward for the first time by M.N. Roy.
- The first meeting of the Constituent Assembly took place on December 9, 1946 at New Delhi with Dr Sachidanand being elected as the interim President of the Assembly.
- However, on December 11, 1946, Dr. Rajendra Prasad was elected as the President and H.C. Mukherjee as the Vice-President of the Constituent Assembly.
- Constituent Assembly was to be a partly elected and partly nominated body.
- Moreover, the members were to be indirectly elected by the members of the provincial assemblies, who themselves were elected on a limited franchise.

100. Ans. (c)

- Option c is the correct answer.
- Statement 1 is incorrect: The Government of India Act, 1935 empowered the Members of Federal Assembly to move a vote of no confidence against ministers.
- Council of States could not move a vote of no-confidence.
- Statement 2 is correct: Provincial Governor was to be the Crown's nominee and

representative to exercise authority on the king's behalf in a province.

- He was to have special powers regarding minorities, rights of civil servants, law and order, British business interests, partially excluded areas, princely states, etc.
- Statement 3 is incorrect: The Act divided the powers between the Centre and units in terms of three lists — Federal List (for Centre), Provincial List (for provinces) and the Concurrent List (for both).
- Residuary powers were given to the Viceroy.
- (The Viceroy was also the Governor-General of India)