



# All India Civil Services Coaching Centre

(Under the aegis of Government of Tamil Nadu)

## Answer Key Explanation

### Test 8 – GS Paper I

Maximum Questions: 100

Maximum Marks: 200

**1. Ans. B**

**Exp:** Buddha never could visit Ujjain (Avanti) though the then King Pradotya Mahasena invited him. Stupa was built by Ashoka and enlarged later on. Buddha has been shown through symbols, not human form. Ashokan Pillar had four lions on the top.

**2. Ans. B**

**Exp:** The chief god Shiva or some other deity was installed in the main temple, around which four subsidiary shrines were erected to house the other four deities. Such temples were known as panchayatana.

Dashavatar temple constructed in late Gupta period was the earliest temple in panchayatana style.

Laxman temple constructed in Khajuraho by Chandela Kings is also in panchayatana style. In the temple an image of Chaturmukha Vishnu is in the garbhagriha. Vishnu in three shrines and Surya in one, which can be identified by the central image on the lintel of the shrine-doors. Thus the temple plan is of a panchayatana type.

(NCERT XI - Introduction to Indian art, Page No. 101)

**3. Ans. C**

**Exp:** Statement 4 is incorrect: Legal Sector Reform was not the part of first generation reform.

#### Economic Reforms

- A total of three generations of reforms have been announced till date, while

experts have gone to suggest the fourth generation, too.

#### First Generation Reforms (1991–2000)

- The broad coordinates of the First Generation of reforms may be seen as under:
- Promotion to Private Sector
- Public Sector Reforms
- External Sector Reforms
- Financial Sector Reforms
- Tax Reforms
- It was in the year 2000–01 that the government, for the first time, announced the need for the Second Generation of economic reforms and it was launched in the same year.
- The ones which had been initiated by then (i.e., from 1991 to 2000) were called by the government as the reforms of the First Generation.

**4. Ans. D**

**Exp:** All statements are correct

#### Evolution of Peninsular drainage system

- Three major geological events in the distant past have shaped the present drainage systems of Peninsular India:
- Subsidence of the western flank of the Peninsula leading to its submergence below the sea during the early tertiary period. Generally, it has disturbed the symmetrical plan of the river on either side of the original watershed.
- Upheaval of the Himalayas when the northern flank of the Peninsular block was subjected to subsidence and the consequent trough faulting. The

Narmada and The Tapi flow in trough faults and fill the original cracks with their detritus materials. Hence, there is a lack of alluvial and deltaic deposits in these rivers.

- Slight tilting of the Peninsular block from northwest to the south-eastern direction gave orientation to the entire drainage system towards the Bay of Bengal during the same period.

#### 5. Ans. A

**Exp:** Statement 2 is incorrect: They are not sacrosanct or permanent. The Parliament can curtail or repeal them.

#### Features of Fundamental Rights

- Some of them are available only to the citizens while others are available to all persons whether citizens, foreigners or legal persons like corporations or companies.
- They are not absolute but qualified. The state can impose reasonable restrictions on them. However, whether such restrictions are reasonable or not is to be decided by the courts. Thus, they strike a balance between the rights of the individual and those of the society as a whole, between individual liberty and social control.
- All of them are available against the arbitrary action of the state. However some of them are also available against the action of private individuals.
- Some of them are negative in character, that is, place limitations on the authority of the State, while others are positive in nature, conferring certain privileges on the persons.
- They are justiciable, allowing persons to move the courts for their enforcement, if and when they are violated.
- They are not sacrosanct or permanent. The Parliament can curtail or repeal them but only by a constitutional amendment act and not by an ordinary act. Moreover, this can be done without

affecting the 'basic structure' of the Constitution.

- They can be suspended during the operation of a National Emergency except the rights guaranteed by Articles 20 and 21. Further, the six rights guaranteed by Article 19 can be suspended only when emergency is declared on the grounds of war or external aggression (i.e., external emergency) and not on the ground of armed rebellion (i.e., internal emergency).
- Their application to the members of armed forces, para-military forces, police forces, intelligence agencies and analogous services can be restricted or abrogated by the Parliament.
- Their application can be restricted while martial law is in force in any area.

#### 6. Ans. D

**Exp:** All the statements are correct:

#### Integrated Geospatial Platform

- The Department of Science and Technology (DST), Government of India, has created an Integrated Geospatial Platform out of available geospatial datasets, standards based services, and analytic tools to help decision making during the current COVID- 19 outbreak and aid devising area-specific strategies to handle the socio-economic impact in the recovery phase.
- The mobile application SAHYOG, as well as the web portal prepared & managed by the Survey of India (Sol), has been customized to collect COVID-19 specific geospatial datasets through community engagement to augment the response activities by Government of India to the pandemic. Information parameters required as per the Govt. of India strategy and containment plan for large outbreaks have been incorporated in the SAHYOG application.
- The platform is initially expected to strengthen the public health delivery

system of the State and Central Governments and subsequently provide the necessary geospatial information support to citizens and agencies dealing with the challenges related to health, socio-economic distress, and livelihood challenges.

- This integrated geospatial platform will strengthen the Nation's health emergency management due to the COVID-19 outbreak and support the socio-economic recovery process through the seamless provision of spatial data, information, and linkage between human, medical, technological, infrastructural and natural resources.

**7. Ans. C**

**Exp:** The work done and heat absorbed by a system depend on the route taken between the initial and final states. Entropy is a function that measures the disorder within a system.

Enthalpy depends on the heat energy absorbed by a system. Both entropy and enthalpy have values that do not depend on the path the system has taken, only on its current state. Therefore, they are both state functions.

**8. Ans. D**

**Exp:** Carbon Dioxide extinguishers are filled with non-flammable carbon dioxide gas under extreme pressure. Carbon dioxide extinguishes work by displacing oxygen, or taking away the oxygen element of the fire triangle. The carbon dioxide is also very cold as it comes out of the extinguisher, so it cools the fuel as well.

Bromochloromethane or methylene bromochloride and Halon 1011 is a mixed halomethane. It was invented for use in fire extinguishers by the Germans to create a less toxic, more effective alternative to carbon tetrachloride.

In the 1940s, Germany invented the liquid Chlorobromomethane (CBM) for use in

aircraft. It was more effective and slightly less toxic than carbon tetrachloride and was used until 1969. Potassium bicarbonate is used for fires due to electrical appliances and flammable liquids.

Type of fire extinguisher	Working Principle	Nature of fire for which used
Dry powder extinguisher (sand and baking soda)	Cuts off supply of air	All types of fire
Baking soda sulphuric acid extinguisher (soda acid)	Cuts off supply of air	All types of fire except due to electrical and inflammable liquids
Foam type extinguisher Water	Cuts off supply of air Cools the substance below the ignition temperature	Fire due to inflammable liquids  All types except due to electricity and oil
Carbon tetrachloride extinguisher	Cuts off supply of air	Fire due to electricity

**9. Ans. A**

**Exp:**

- Joint Forest Management (JFM) is an approach and program initiated in the context of the National Forest Policy of 1988 wherein state forest departments support local forest-dwelling and forest fringe communities to protect and manage forests and share the costs and benefits from the forests with them. Here, there is no legal sanction for JFM. Hence statement 2 is not correct.
- Accordingly, JFM tries to harness the strengths and energy of local rural communities for protecting and managing forests through JFM Committees/ Eco Development Committees and helps to meet their

needs for subsistence and livelihood as well as generates local environmental services. Hence statement 1 is correct.

- Membership for a JFMC is open for all members of the gram sabha – i.e. voting adults. (in some states membership is open to one male and one female member of each household). The Executive Committee is responsible for managing the overall operations of the JFMC. The JFMC member will elect the Executive Committee from the JFMC/EDC members, or as defined in the state guidelines.
- JFM has the potential to meet local subsistence needs, of fuelwood, fodder, other non-timber forest produce, small timber and timber etc., to provide livelihood through sale of produce, while at the same time, preventing degradation of the forests that provide local, national and global environmental benefits.

#### 10. Ans. A

**Exp:**

- The Banni grassland in the Kachchh District of Gujarat is an area of 2500 km<sup>2</sup> and is often referred to as one of the largest tropical grasslands in Asia. The Banni is home to great biological diversity, having 37 grass species, 275 bird species, and domesticated animals, like Banni Buffalo, Kankrej Cattle, Sheep & Goat, Horses and Camel, as well as wildlife.
- The Maldhari community is a tribe of herdsmen in the state of Gujarat. The name Maldhari means the owner of goods - in this case, goods referring to cattle. The Maldharis have lived in the Gir National Park, in the Banni Grasslands Reserve area, for the past thousand years. They have co-existed with the lions, which the Gir National Park was created to preserve, for these thousand years.
- In the early 1960s, the Gujarat Forest Department planted *Prosopis juliflora* in 31,550 ha (~315 km<sup>2</sup>) of the Banni with a

stated objective of minimizing the perceived threats of salinity ingress and desertification. Over the past 50 years, *Prosopis* has spread from 315 km<sup>2</sup> to close to 1500 km<sup>2</sup> of the Banni. This expansion is thought to have taken place at the expense of palatable and perennial grass species.

- Chir Batti refers to an unexplained light phenomenon that occurs on dark nights in the Banni grasslands of Gujarat. Local villagers refer to the light as Chir Batti in their Kutchhi-Sindhi language, with Chir meaning ghost and Batti meaning light.
- Recently built dams, overgrazing have also taken their toll on both the biodiversity of the grassland and Maldharis.
- Bugyals are alpine pasture lands, or meadows, in higher elevation range between 3,300 metres and 4,000 metres of the Himalayas in the Indian state of Uttarakhand.
- Khajjiar is a small plateau in Chamba district Himachal Pradesh and surrounded by green meadows and dense forests. Grasslands of Khajjiar is covered by dense deodar and fir forest lies in the path of the Ravi River and offers numerous trekking opportunities.
- Sholas are the local name for patches of stunted tropical montane forest found in valleys amid rolling grassland in the higher montane regions of South India.

#### 11. Ans. D

**Exp:** Aerosols are minute particles suspended in the atmosphere. When these particles are sufficiently large, we notice their presence as they scatter and absorb sunlight. Their scattering of sunlight can reduce visibility (haze) and redden sunrises and sunsets.

- Aerosols interact both directly and indirectly with the Earth's radiation budget and climate. As a direct effect, the aerosols scatter sunlight directly back into space. As an indirect effect, aerosols in the lower atmosphere can modify the size of cloud particles, changing how the clouds reflect and

absorbs sunlight, thereby affecting the Earth's energy budget.

- Aerosols also can act as sites for chemical reactions to take place (heterogeneous chemistry). The most significant of these reactions are those that lead to the destruction of stratospheric ozone. During winter in the polar regions, aerosols grow to form polar stratospheric clouds.
- The large surface areas of these cloud particles provide sites for chemical reactions to take place. These reactions lead to the formation of large amounts of reactive chlorine and, ultimately, to the destruction of ozone in the stratosphere.
- Hence all the statements are correct.

#### 12. Ans. C

**Exp:** The Kayaks or backwaters of Kerala are a network of brackish lagoons and lakes lying parallel to the Arabian Sea coast (Malabar Coast) as well as interconnected canals, rivers, and inlets. Hence statement (c) is the correct answer.

- They are used for fishing, inland navigation and also due to its special attraction for tourists. Every year the famous Nehru Trophy Vallamkali (boat race) is held in Punnamada Kayal in Kerala. Backwaters in Kerala are a network of 1500 km of canals both manmade and natural, 38 rivers and 5 big lakes extending from one end of Kerala to the other.
- Backwaters are one of the major tourism products of Kerala, being unique to the state. Traditionally used as one of the main transportation alleys, today backwaters offer a rejuvenating experience for tourists visiting Kerala.

#### 13. Ans. C

**Exp:** Both statements are correct: The 2+2 dialogue is the highest-level (Ministerial) institutional mechanism between India and the USA that brings together the perspectives of the two countries on foreign policy,

defence and strategic issues. India also holds such dialogue with Japan as well. India also holds 2+2 dialogue with Australia at the foreign secretary and defence secretary level. But recently, India and Australia decided to upgrade their '2+2' dialogue from level of secretaries to that of ministers.

#### QUAD countries

- Foreign ministers of all four Quad countries – India, US, Japan, Australia – will meet in the Japanese capital Tokyo on October 6, 2020.
- Foreign Ministers will discuss the post-COVID-19 international order and the need for a coordinated response to the various challenges emerging from the pandemic. Four ministers will also discuss regional issues and collectively affirm the importance of maintaining a free, open and inclusive Indo-Pacific.
- This will be the second such Quad foreign ministers meet. In 2019, all the foreign ministers of Quad countries met on the sidelines of the United Nations General Assembly.
- Quadrilateral Security Dialogue (Quad) is the informal strategic dialogue between India, USA, Japan and Australia with a shared objective to support a “free, open and prosperous” Indo-Pacific region.
- The idea of Quad was first mooted by Japanese Prime Minister Shinzo Abe in 2007. However, the idea couldn't move ahead with Australia pulling out of it, apparently due to Chinese pressure.

#### 14. Ans. C

**Exp:** Statement 1 is incorrect: A polygraph test is based on the assumption that physiological responses that are triggered when a person is lying are different from what they would be otherwise. Narco analysis, by contrast, involves the injection of a drug, sodium pentothal, which induces a hypnotic or sedated state in which the subject's imagination is neutralized, and they are expected to divulge information that is true.

### Polygraph Tests

- The UP government wants to carry out sweeping Narco and Polygraph tests on 'all people on the accused and victim side', as well as 'police officers involved in the (Hathras) case and other persons related to the case.
- A polygraph test is based on the assumption that physiological responses that are triggered when a person is lying are different from what they would be otherwise.
- Narco analysis, by contrast, involves the injection of a drug, sodium pentothal, which induces a hypnotic or sedated state in which the subject's imagination is neutralized, and they are expected to divulge information that is true.
- In 'Selvi & Ors vs State of Karnataka & Anr' (2010), a Supreme Court Bench comprising Chief Justice of India K G Balakrishnan and Justices R V Raveendran and J M Panchal ruled that no lie detector tests should be administered "except on the basis of consent of the accused". Involuntary administration of Narco or lie detector tests is an "intrusion" into a person's "mental privacy."
- SC said that the results of the tests cannot be considered to be "confessions", because those in a drugged-induced state cannot exercise a choice in answering questions that are put to them. However, any information or material subsequently discovered with the help of such a voluntarily-taken test can be admitted as evidence.

### 15. Ans. A

**Exp:** Statement 2 is incorrect: It is located in the Pir Panjal range under Rohtang pass.

### Atal Tunnel

- Prime Minister Narendra Modi recently inaugurated the Atal Tunnel at Rohtang at an altitude of above 3,000 metres in Himachal Pradesh.

- The 9.02 km-long-tunnel, built by the Border Roads Organisation (BRO), is the world's longest highway tunnel and connects Manali to Lahaul-Spiti valley.
- It provides all-weather connectivity to the landlocked valley of Lahaul-Spiti, which remains cut-off for nearly six months in a year as the Rohtang Pass is usually snowbound between November and April.
- The 9-km-long tunnel under the Pir Panjal range, named after former Prime Minister Atal Bihari Vajpayee.

### 16. Ans. A

**Exp:** The Milk Fortification Project, was launched by NDDDB in collaboration with World Bank and Tata Trusts as a pilot project on 5th September 2017. It aims to process about 2 million tonnes of fortified milk reaching around 30 million consumers. The program intends to address vitamin A and vitamin D deficiency in consumers. Hence, the statement a is correct.

### 17. Ans. A

**Exp:** Due to Earth's axial tilt, day and night are not evenly divided. The hemisphere having maximum exposure to the Sun has longer days and shorter nights.

That is why the days are longer during the summer than during the winter. If the Earth's axis were perpendicular to its orbital plane around the Sun, all places on Earth would experience equal amounts of day and night (i.e. 12 hours of day and night, respectively), every day throughout the year and there would be no seasonal variability. So the primary cause of changing of the length of day and night is the tilt of Earth's axis. So, Statement 1 is correct.

Rotation of the Earth causes Earth to experience day and night. As Earth rotates on its axis it's one side is facing the Sun and the other is facing away, and this alternatively changes for 24 hours. Thus, it does not affect the length of day and night. So, Statement 3 is incorrect.

Revolution around the Sun causes periodic shifts in the direction of the Earth's rotational axis thus causing North-Pole to tilt towards the Sun during the summer solstice and the South Pole to tilt towards the Sun during the winter solstice. However, the primary reason for the change in length of day and night is the tilt of the Earth's rotational axis. So, Statement 2 is incorrect.

**18. Ans. D**

**Exp:** In one of the significant efforts towards doubling the Farmers Income, the National Animal Disease Control Programme (NADCP) for eradicating the Foot and Mouth Disease (FMD) and Brucellosis in the livestock, was launched. With 100 Percent funding from the Central Government, for five years, the programme aims at vaccinating over 500 Million Livestock including cattle, buffalo, sheep, goats and pigs against the FMD.

The programme also aims at vaccinating 36 Million Female Bovine Calves annually in its fight against the Brucellosis disease. The Programme has two components – to control the diseases by 2025 and eradication by 2030. Hence, all the statements are correct.

**19. Ans. D**

**Exp:** Zero Budget Natural Farming, as the name implies, is a method of farming where the cost of growing and harvesting plants is zero. Zero budget natural farming requires only 10 per cent water and 10 per cent electricity than what is required under chemical and organic farming. ZBNF may improve the potential of crops to adapt to and be produced for evolving climatic conditions. Hence, Statement 4 is correct.

This means that farmers need not purchase fertilisers and pesticides in order to ensure the healthy growth of crops. It is, basically, a natural farming technique that uses biological pesticides instead of chemical-based fertilisers. Farmers use earthworms, cow dung, urine, plants, human excreta and such biological fertilisers for crop protection.

It reduces farmers' investment. It also protects the soil from degradation. Hence, Statements 1, 2 and 3 are correct.

**20. Ans. A**

**Exp:** Model APMC Act 2003

Efficient agricultural marketing is essential for the development of the agriculture sector as it provides outlets and incentives for increased production; the marketing system contributes significantly to the commercialisation of subsistence farmers. Worldwide Governments have recognised the importance of liberalised agriculture markets.

Following the above objectives, the Model APMC Act was drafted by the Ministry of Agriculture in 2003, with the following significant features:

- It provides for direct sale of farm produce to contract farming sponsors. So, statement 1 is correct.
- It provides a provision for setting up "Special markets" for "specified agricultural commodities."
- It permits private persons, farmers and consumers to establish new markets for agricultural produce in any area. So, statement 2 is incorrect.
- Every market shall levy a market fee on sale or purchase of agriculture commodities which is brought from within or outside the state.
- Replaces licensing with registrations of market functionaries and trade at any market area within the state. So statement 3 is incorrect.
- Market Committees permitted to use its funds to create facilities like grading, standardisation and quality certification; to create infrastructure for post-harvest handling of agricultural produce and development of modern marketing system.
- State Governments conferred power to exempt any agricultural produce brought for sale in the market area, from payment of the market fee.

- State Agricultural Marketing Board made responsible for grading and standardisation. So, statement 4 is correct.

**21. Ans. B**

**Exp:** The concept of 'equality before the law' is an element of the concept of 'Rule of Law', propounded by A.V. Dicey, the British jurist with the following components -:

- (1) Absence of arbitrary power, that is, no man can be punished except for a breach of law. So, statement (3) is correct.
- (2) Equality before the law that is, equal subjection of all citizens (rich or poor, high or low, official or non-official) to the ordinary law of the land administered by the ordinary law courts. So, statement (1) is correct.
- (3) Principles of the Constitution are the result of the ordinary law of the land. Dicey stated that Britain had a court-based Constitution (in effect, a common-law constitution), in the sense that decisions made by the judges directly resulted in the principles of the Constitution concerning the rights of private persons.

This reveals Dicey's belief that the common law affords greater protection to the citizens than a written Constitution. In India, however, the written Constitution is the source of legal liberties of citizens.

Therefore, all the laws flow from the Constitution. In the Indian System, the Constitution is the source of individual rights. So, Statement (2) is not correct.

Hence option (b) is the correct answer.

**22. Ans. C**

**Exp:** The basis of the principle of natural justice is to ensure fairness in social and economic activities of the people and to shield individual liberty against arbitrary action. Natural justice mainly focuses on the following:

- (a) Nemo judex in causa sua – one cannot be made a judge in his own cause or the rule against bias. Hence statement (3) is correct.
- (b) Audi alteram partem – a judge should always listen to the other party or a fair hearing should be done before any order.

Natural Justice is nowhere mentioned explicitly in the Indian Constitution, although the Constitution has passed the golden thread of natural justice pervading its provisions throughout. Hence statement (1) is not correct.

**Principles of Natural Justice in India are as follows:**

- (a) The social and economic justice seen in the Preamble of the Constitution is based on natural justice.
- (b) Article 311 has many features of natural justice without explicitly mentioning it.
- (c) According to Article 14 violation of natural justice is equal to violation of equality.
- (d) Article 21 has the language of Principle of Natural Justice throughout. Hence statement (2) is correct.

Therefore, the correct answer is (c).

**23. Ans. C**

**Exp:** The scope of rights under Article 21 has been expanded by interpretation of "Life" and "Liberty" by the Supreme Court. Right to clean environment, right to speedy trial etc. are the inferred rights that have been pronounced by the apex court on a case to case basis. So, option (a) is correct.

According to Article 21, the State can take away life and liberty of an individual only by the procedure established by law. There is no other explicit limitation on the State's power to take away life and liberty. However, as observed by the Supreme Court in Maneka Gandhi case, the procedure established by law must be reasonable and "reasonableness

of the procedure is implicit in Article 21 itself." So, option (b) is correct.

In Maneka Gandhi case, the Supreme Court observed that the principle of "due process of law" is implied in the "procedure established by law." And thus, for taking away life and liberty of an individual, there must be a "procedure" and the "procedure must be just, fair and reasonable. So, option (c) is not correct.

Right to life and personal liberty is available to both the citizens of India as well as foreign nationals. So, option (d) is correct.

Therefore, the answer is (c).

**24. Ans. B**

**Exp:** Mahatma Gandhi launched the Civil Disobedience Movement (CDM) by violating the Salt law by picking up a lump of salt at Dandi on April 6, 1930. The violation of the law was seen as a symbol of the Indian people's resolve not to live under British-made laws and therefore under British rule. Soon the Movement spread to different parts of the country.

In Solapur, the textile workers went on a strike from May 7, 1930. Along with other residents, they burnt liquor shops and other symbols of government authority such as railway stations, police stations, municipal buildings, law courts, etc.

The activists established a virtual parallel government in Solapur during the CDM. However, it was during the Quit India Movement in 1942, that the parallel governments were established in Satara (under the leadership of Y.B.Chavan, Nana Patil), Tamluk and Ballia (under Chittu Pandey). So, Statement (1) is not correct.

In the United Provinces, a No-revenue campaign was originally organised. However, because most of the zamindars were loyalists, the campaign became virtually a No-rent campaign. Similarly, in landlocked

Bihar, manufacture of salt on a large scale was not practicable.

In Patna, Nakhas Pond was chosen as a site to make salt and break the salt law under Ambika Kant Sinha. Soon, a very powerful No-chowkidari tax agitation replaced the salt satyagraha. The chowkidari tax was levied especially on the villages.

The chowkidars were guards who supplemented the small police force in the rural areas in this region. They were particularly hated because they acted as spies for the government and often also as retainers for the local landlords.

The movement against this tax called for the resignation of Chowkidars and of the influential members of chowkidari panchayats who appointed the Chowkidars (started in Bihar.) So, statement (2) is correct.

Therefore, the correct answer is (b).

**25. Ans. A**

**Exp:** The Bardoli Satyagraha was started to oppose the decision by authorities to increase the land revenue by 30 per cent. A Bardoli Inquiry Committee was set up to go into the issue. The Committee found the revenue hike to be unjustified. So, statement (1) is correct.

It was Sardar Vallabhbhai Patel who was called to lead the Movement. Under Patel, the Bardoli peasants resolved to refuse payments of the revised assessment until the government appointed an independent tribunal.

To organise the Movement, Sardar Patel set up 13 chhavanis or workers' camps in the taluka. Special emphasis was placed on the mobilisation of women. Bardoli Satyagraha Patrika was brought out to mobilise public opinion. So, Statement (2) is not correct.

Therefore, the correct answer is (a).

**26. Ans. D**

**Exp:** In November 1927, the British government appointed the Simon Commission to report on India's Constitutional progress for introducing Constitutional reforms, as promised. The Commission published its 2-volume report in May 1930. It proposed the abolition of dyarchy and the establishment of representative government in the Provinces. So, statement (1) is correct.

It also recommended that separate communal electorates be retained, but only until tensions between the Hindus and the Muslims had died down. It said that the Governor should have discretionary power about internal security and administrative powers to protect the different communities. The number of members of the Provincial Legislative Council should be increased. So, statement (2) is correct.

The Report rejected parliamentary responsibility at the Centre. The Governor-General was to have complete power to appoint the members of the Cabinet. And the Government of India would have complete control over the High Court. Thus, it proposed no changes in the Central government. So, statement (3) is correct.

Therefore, the correct answer is (d).

**Additional Information:**

The Indian Statutory Commission, commonly referred to as the Simon Commission, was a group of seven British Members of Parliament under the chairmanship of Sir John Simon. The commission arrived in British India 1928 to study constitutional reform in Britain's largest and most important possession. At the time of introducing the Montagu Chelmsford Reforms in 1919, the British Government declared that a Commission would be sent to India after ten years to examine the effects and operations of the constitutional reforms and to suggest more reforms for India.

**27. Ans. B**

**Exp:** Kittur Utsava was organised to celebrate Queen Rani Channamma's victory over East India's company. The festival organized sports, cultural programmes and lectures by resource persons on the kingdom of Rani Channamma.

- Rani Chennamma, the queen of Kitturu was a warrior who led a war against British forces in the early part of 19th Century. She was among the first Indian rulers to lead an armed rebellion against the British East India Company in 1824. She was outnumbered and arrested, but she is still remembered for leading the revolt against British rule in India.
- She was married to Mallasarja Desai, the king of Kittur, at the age of 15 and became the queen of Kittur. She had one son from the marriage, who after the death of her husband in 1816, also died in 1824.
- As the queen of Kittur, Kittur Chennamma adopted Shivalingappa after the death of her only son with the aim of making him the heir to the throne of Kittur. The British East India Company did not take lightly to Chennamma's act and ordered Shivalingappa's exile from the kingdom under the pretext of the **Doctrine of Lapse**.
- However, Rani Chennamma defied the British order to expel Shivalingappa from the throne. This led to the outbreak of war. Hence statement 1 is not correct.
- During the freedom movement, her brave resistance against the British forces became the theme of several inspirational plays, folk songs (Lavani) and stories. Rani Chennamma's first victory against the British forces is still honoured annually in October during the 'Kittur Utsava', held in Kittur.

Hence, statement 2 is correct.

**28. Ans. D**

**Exp:** Stem cells can be derived from both mammals and non-mammals. Induced

pluripotent stem cells are derived from adult or mature cells.

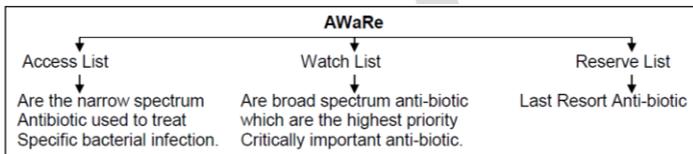
**29. Ans. B**

**Exp:** Omega-3 polyunsaturated fatty acid increases the level of high-density lipoprotein (HDL) which reduces the risk of a heart attack.

**30. Ans. C**

**Exp:**

- (1) Colistin is the last resort antibiotic for the treatment of patients infected by extensively drug-resistant bacteria. Colistin was widely used in livestock and poultry meat production. Therefore, its manufacture, sale and distribution have been banned for food-producing animals, poultry aqua farming and animal feed supplements in a bid to preserve its efficacy.
- (2) AWaRe is a useful tool to reduce antimicrobial resistance. The first goal is to have all countries report antibiotic use by 2023.



**31. Ans. B**

**Exp:** Biosphere Reserves (BRs) are representative parts of natural and cultural landscapes extending over large area of terrestrial or coastal/marine ecosystems or a combination thereof and representative examples of bio-geographic zones/provinces.

- The core area of biosphere reserve should be typical of a bio-geographical unit and large enough to sustain viable populations representing all trophic levels in the ecosystem.
- The UNESCO has introduced the designation 'Biosphere Reserve' for natural areas to minimize conflict between development and conservation. BRs are nominated by national government which meet a minimal set of criteria and adhere to minimal set of

conditions for inclusion in the world network of Biosphere reserves under the Man and Biosphere Reserve Programme of UNESCO. Thus only 10 of the 18 biosphere reserves are covered under MAB (Man and the Biosphere Programme).

- At present, there is no comprehensive legislation dealing with all aspect of biosphere. Only few aspects have legal backing e.g. the core areas like National park or wildlife sanctuaries of reserve are governed under Wildlife Protection Act, 1972.

**32. Ans. D**

**Exp:** The International whaling commission (IWC) was set up under the International Convention for the Regulation of Whaling which was signed in Washington DC on 2nd December 1946. The preamble to the Convention states that its purpose is to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry. Hence, statement 1 is correct.

- An integral part of the Convention is its legally binding 'Schedule.' The Schedule sets out specific measures that the IWC has collectively decided are necessary in order to regulate whaling and conserve whale stocks. Hence, statement 2 is not correct.
- These measures include catch limits (which may be zero as it the case for commercial whaling) by species and area, designating specified areas as whale sanctuaries, protection of calves and females accompanied by calves, and restrictions on hunting methods. Unlike the Convention, the Schedule can be amended and updated when the Commission meets (a change requires at least three quarters majority agreement).

Membership of the IWC is open to any country in the world that formally adheres to the 1946 Convention. Each member country is known as a

Contracting Government and represented by a Commissioner, who is assisted by experts and advisers. India is a member to the convention. Hence, statement 3 is correct.

- The Chair and Vice-chair are elected from among the Commissioners and usually serve for four years, first as Vice-chair for two years, and then as Chair.

### 33. Ans. C

**Exp:** Biodiversity Finance Initiative (BIOFIN) is a global partnership addressing the biodiversity finance challenge in a comprehensive manner. The Initiative provides an innovative methodology enabling countries to measure their current biodiversity expenditures, assess their financial needs in the medium term and identify the most suitable finance solutions to bridge their national biodiversity finance gaps.

- United Nations Development Programme (UNDP) in October 2012 launched the Biodiversity Finance Initiative – BIOFIN, as a new global partnership seeking to address the biodiversity finance challenge in a comprehensive manner – building a sound business case for increased investment in the management of ecosystems and biodiversity. BIOFIN is managed by the UNDP Ecosystems and Biodiversity Programme, in partnership with the European Union and the Governments of Germany and Switzerland.
- India is also a part of this initiative. For the purpose of implementing BIOFIN project in India, the Ministry of Environment, Forest and Climate Change has identified National Biodiversity Authority (NBA) as the host organisation.

### 34. Ans. A

**Exp:** Statement 4 is incorrect: The Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act) outlaws the recreational use of cannabis. The NDPS Act, however, does not apply to the leaves and seeds of cannabis

plants. In case the CBD is extracted from the leaves of the cannabis, then technically it is not illegal. CBD oil manufactured under a licence issued by the Drugs and Cosmetics Act, 1940 can be legally used.

### CBD Oil

- CBD oil is an extract from the cannabis plant. The two main active substances in it are cannabidiol or CBD and delta-9 tetrahydrocannabinol, or THC. The high that is caused by the consumption of cannabis is due to THC. CBD, however, does not cause a “high” or any form of intoxication. CBD oil is made by extracting CBD from the cannabis plant, then diluting it with a carrier oil like coconut or hemp seed oil.
- Cannabidiol has effects on the brain, preventing the breakdown of a chemical that aggravates pain and affects mood, and mental function. It can reduce pain and anxiety. It also reduces psychotic symptoms associated with conditions such as schizophrenia as well as epilepsy.
- CBD is extracted from marijuana plants as either an oil or powder. These can be mixed into creams or gels. They can be put into capsules and taken orally, or rubbed on your skin. All topicals (cannabis-infused products) should be applied directly to the site of inflammation or pain to work in a specific area.

### 35. Ans. C

**Exp:** Statement 1 is incorrect: JJM aims to ensure piped water supply to all rural households (HH's) by 2024.

### Jal Jeevan Mission (JJM)

- The Union Minister of Jal Shakti recently launched a special mission mode campaign to provide potable piped water supply in all Schools & Anganwadi Centres across the nation within 100 days. This mission was envisaged by the Prime Minister on 29th September, 2020 while releasing the 'Margdarshika' for Gram

Panchayats and Paani Samitis for implementation of Jal Jeevan Mission (JJM).

- JJM aims to ensure piped water supply to all rural households (HH's) by 2024.
- Under the mission, special focus is on women and children. Ensuring safe water to children is a priority, as they are the most vulnerable to water-borne diseases like diarrhoea, dysentery, cholera, typhoid, etc. Repeated infections due to consumption of unsafe water in their formative years may have adverse effects, resulting in stunting.
- This Mission, under the Department of Drinking Water and Sanitation, will focus on integrated demand and supply side management of water at the local level, including creation of local infrastructure for source sustainability like rainwater harvesting, groundwater recharge and management of household wastewater for reuse in agriculture.
- It will converge with other Central and State Government Schemes to achieve its objectives of sustainable water supply management across the country.
- Compensatory Afforestation Fund Management and Planning Authority (CAMPA) fund can be used for this purpose.

### 36. Ans. B

**Exp:** Pair 2 is incorrectly matched: IN - BN Coordinated Patrol (CORPAT) is a bilateral naval exercise between India and Bangladesh.

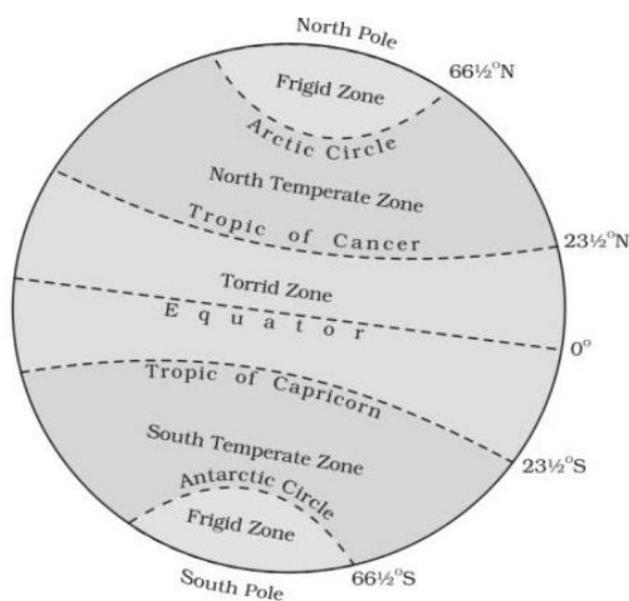
#### Exercise Bongosagar

- The second edition of Indian Navy (IN) – Bangladesh Navy (BN) Bilateral Exercise Bongosagar is scheduled to commence in Northern Bay of Bengal on 03 October 2020.
- Exercise Bongosagar, whose first edition was held in 2019, is aimed at developing inter-operability and joint operational skills through conduct of a wide spectrum of maritime exercises and operations.

- This exercise will be followed by the 3<sup>rd</sup> edition of IN - BN Coordinated Patrol (CORPAT) in Northern Bay of Bengal from 4 to 5 October 2020, wherein IN and BN units will undertake joint patrolling along the International Maritime Boundary Line (IMBL).

### 37. Ans. B

**Exp:** Latitudes are imaginary parallel lines which make a circle around the Earth. The equator represents the 0° Latitude. All parallel circles from the equator to the poles are called parallels of latitudes. Latitudes are equidistant from each other. As we move away from the equator, the size of the parallels of latitudes decreases. So, Statement 1 is incorrect.



#### Important Latitudes and Heat Zones

Longitudes (also known as meridians), on the other hand, are imaginary semi-circles running from pole to pole passing through the equator and the distance between them decreases steadily polewards until it becomes zero at the poles, where all meridians meet. So, Statement 2 is correct.

Based on the heat received from the Sun latitude wise, the Earth is divided into three heat zones: Torrid Zone, Temperate Zone and Frigid Zone.

Longitudes are used to measure time through the 'Prime Meridian of Greenwich' (0°).

When the Sun is at the highest point in the sky at Greenwich, all the places along the meridian will have the same time (noon). As the Earth rotates from west to east, those places east of Greenwich will be ahead of Greenwich Time, and those to the west will be behind. So, Statement 3 is correct.

**38. Ans. A**

**Exp:** Convective rainfall is typical in the summer or the hotter part of the day. It is widespread in the equatorial regions and interior parts of the continents, particularly in the northern hemisphere. So, statement 1 is incorrect.

Between 45° and 65° N and S of the Earth (cold temperate region), due to the westerlies, the rainfall is first received on the western margins of the continents. Like the equatorial region, The rainfall is distributed evenly throughout the year in the western parts of cold temperate region. So, statement 2 is also incorrect.

Coasts receive more rainfall as the humidity in the clouds is high when they are at the coast. When they come inside the lands, they have already shed some water in the form of rains, so they precipitate comparatively less in the interior of the continents. Statement 3 is correct.

**39. Ans. C**

**Exp:** The reflected amount of radiation is called the 'albedo of the Earth'. Snow has higher albedo and reflects as much as 90% of the incoming solar radiation. Thus, melting of snow and ice-covered areas of the Earth will lead to more absorption of heat and will thus reduce the albedo of the Earth. Thus, statement 1 is incorrect.

The transfer of heat through the horizontal movement of air is called advection. In

middle latitudes, most of diurnal variations in daily weather are caused by advection alone. Conduction is the process in which the air in contact with the land gets heated slowly, and the upper layers in contact with lower layers also get heated. Thus, statement 3 is incorrect.

There is a surplus of net radiation balance between 40° north and south and the regions near the poles have a deficit. The surplus heat energy from the tropics is redistributed polewards, and as a result, the tropics do not get progressively heated up due to the accumulation of excess heat or the high latitudes get permanently frozen due to excess deficit. Thus, statement 2 is correct.

**40. Ans. A**

**Exp:** Electronic National Agriculture Market (E-NAM) is envisioned as a unified national electronic market bringing interconnectivity to markets across the country.

The NAM Portal provides a single-window service for all APMC related information and services. While material flow (agriculture produce) continue to happen through Mandis, an online market reduces transaction costs and information asymmetry. So, statement 1 is correct.

**Objectives of E-NAM:**

- Transparent sale transactions and price discovery initially in regulated markets.
- Liberal licensing of traders/buyers and commission agents by State authorities.
- One license for a trader valid across all markets in the State. So, statement 2 is incorrect.
- Harmonization of quality standards of agricultural produce and provision for assaying infrastructure in every market to enable informed bidding.
- Single point levy of market fees.
- Provision of Soil Testing Laboratories in/ or near the selected Mandi.

SFAC, Small Farmers Agri-business Consortium, is the implementing agency for eNAM. So, statement 3 is correct.

**41. Ans. A**

**Exp:** Contract Farming comes under the concurrent list, as such the state legislature can enact a law on contract farming. So, Statement 1 is correct.

Under contract farming, agricultural production (including livestock and poultry) can be carried out based on a pre-harvest agreement between buyers (such as food processing units and exporters), and producers (farmers or farmer organisations).

The producer can get support from the buyer for improving production through inputs (such as technology, pre-harvest and post-harvest infrastructure) as per the agreement. The producer can sell the agricultural produce at a specific price in the future to the buyer as per the agreement. Hence, statement 2 is correct.

**Salient features of the Model Contract Farming Act, 2018 are:**

- The Act lays particular emphasis on protecting the interests of the farmers, considering them as the weaker of the two parties entering into a contract.
- In addition to contract farming, services contracts all along the value chain including pre-production, production and post-production have been included.
- “Registering and Agreement Recording Committee” or an “Officer” for the purpose at district/block/ taluka level for online registration of sponsor and recording of the agreement provided.
- Contracted produce is to be covered under crop/livestock insurance in operation.
- Contract framing to be outside the ambit of the APMC Act.
- No permanent structure can be developed on farmers’ land/premises. So, statement 3 is incorrect.

- No right, title or interest of the land shall vest in the sponsor. So, statement 4 is incorrect.

**42. Ans. B**

**Exp:** The World Bank defines the Middle Income Trap as a situation where the 'middle-income range' countries get stuck with the gross national product per capita that has remained between \$1,000 to \$12,000 at constant (2011) prices for too long and cannot come out of it. As a country runs out of new sources of growth after an initial burst of rapid expansion, India finds itself unable to break into a higher-income league.

Avoiding the middle-income trap requires expansion into new markets to boost exports and not the other way round. Hence statement 1 is incorrect.

The focus has to be given on improving the status of innovation and switching from cheap labour intensive, resource-driven sectors towards the ones with high productivity. Hence statement 2 is correct.

The best insurance against the risk of slipping into a middle-income trap, however, would be to address mobility restraints at lower levels of the socio-economic pyramid. This would mean sharply upping the quality of healthcare, education and skill development for the deprived masses. Hence statement 3 is correct.

Boosting private investment will bring macroeconomic stability by solving the problem of liquidity crunch. Hence statement 4 is correct.

**43. Ans. B**

**Exp:** Judicial review is the process whereby higher judiciary conducts scrutiny of the Legislative and the administrative actions of the State. Article 13 provides that laws enacted by the Legislature shall be void if they violate the Fundamental Rights guaranteed under Part III, to the extent of

the contravention. Whereas, Articles 32 and 226 empower the Supreme Court and the High Courts, respectively, to issue writs to enforce the Fundamental Rights. Constitutional scrutiny exercised by the higher Judiciary is meant to ensure that constitutional principles are observed in legislative enactments. So, option (b) is correct.

The doctrine of basic structure is applied to check the constitutionality of a Constitutional Amendment. So, option (a) is not correct.

Removing difficulties and enacting laws are the functions of Legislature itself and the Courts have no function to do so under the provision of judicial review. So, option (c) is not correct.

The Fundamental Rights are not supreme but are qualified and these can be taken away for more significant social benefit. So, option (d) is not correct.

Therefore, the correct answer is (b).

**44. Ans. D**

**Exp:** The Supreme Court is a federal court, the highest court of appeal, the guarantor of the Fundamental Rights of the citizens and guardian of the Constitution. Therefore, its independence becomes very essential for the effective discharge of its duty. The Constitution has made the following provisions to safeguard and ensure the independent and impartial functioning of the Supreme Court:

- (1) Appointment by the President in consultation with the Judiciary itself to curtail the absolute discretion of the Executive as well as to ensure that the judicial appointments are not based on any political or practical considerations.
- (2) Security of tenure ensuring independence in functioning. So, statement (1) is correct.
- (3) Fixed service conditions which cannot be changed to their disadvantage after their

appointment except during a Financial Emergency. So, statement (2) is correct.

- (4) Expenses are charged on the Consolidated Fund of India.
- (5) Conduct of the Judges cannot be discussed except when an impeachment motion is under consideration of the Parliament.
- (6) Ban on practice after retirement to ensure that they do not favour anyone in the hope of future favours.
- (7) Power to punish for its contempt to maintain its authority, dignity and honour. So, statement (3) is correct.
- (8) Freedom to appoint its own staff.
- (9) The Parliament cannot curtail its jurisdiction. So, statement (4) is correct.
- (10) Separation from the Executive.

Therefore, the correct answer is (d).

**45. Ans. C**

**Exp:** Under Article 163, the Council of Ministers with the Chief Minister as the head is to aid and advise the Governor except where he is required to exercise his functions discretionarily. So, Statement (1) is correct.

The Governor appoints the Chief Minister. Other Ministers are appointed by the Governor on the advice of the Chief Minister. So, statement (2) is correct.

The Council of Ministers consists of CM and his Ministers. The Ministers hold office during the pleasure of the Governor. The Council of Ministers is collectively responsible to the Legislative Assembly. Thus, the entire Council of Ministers remains in office till it has a majority in the Legislative Assembly. This is not the case with an individual Minister. So, Statement (3) is not correct.

Therefore, the correct answer is (c).

**46. Ans. D**

**Exp:** On January 25, 1931, Mahatma Gandhi and all other members of the Congress Working Committee (CWC) were released

unconditionally. The CWC authorised Gandhi to initiate discussions with the Viceroy. As a result of these discussions, a Pact was signed between the Viceroy, representing the British Indian Government, and Gandhi, representing the Indian people, in Delhi on February 14, 1931. This Delhi Pact, also known as the Gandhi-Irwin Pact, placed the Congress on an equal footing with the government. So, statement (1) is correct.

**Lord Irwin on behalf of the government agreed on-**

1. Immediate release of all political prisoners not convicted of violence. So, statement (2) is correct.
2. Remission of all fines not yet collected;
3. Return of all lands not yet sold to third parties;
4. Lenient treatment to those government servants who had resigned;
5. Right to make salt in coastal villages for personal consumption (not for sale);
6. Right to peaceful and non-aggressive picketing; and
7. Withdrawal of emergency ordinances.

**Gandhi on behalf of the Congress agreed-**

- (i) To suspend the Civil Disobedience Movement. So, statement (3) is correct.
- (ii) To participate in the next Round Table Conference.

Therefore, the correct answer is (d).

**47. Ans. C**

**Exp:** Explanation: The Battle of Buxar was fought on 22 October 1764, between the forces under the command of the British East India Company, led by Hector Munro and the combined armies of Mir Qasim, Nawab of Bengal till 1764, the Nawab of Awadh Shuja-ud – Daula, and the Mughal Emperor Shah Alam II

- It was a decisive victory for the British East India Company. Hence Statement (1) is not correct and statement (2) is correct.
- The war was brought to an end by the Treaty of Allahabad in 1765. Based on the terms of the Agreement, Shah Alam II

granted the East India Company, Diwani rights or the right to collect taxes on behalf of the Emperor from the eastern province of Bengal-Bihar- Odisha. These rights allowed the Company to collect revenue directly from the people of Bengal, Bihar and Odisha.

- Awadh was returned to Shuja-ud-Daulah, but Allahabad and Kora were taken from him. The Nawab of Awadh Shuja-ud-Daulah also had to pay fifty lakhs of rupees as war indemnity to the East India Company. The British victory at Buxar had disposed of the three main scions of Mughal power in Upper India. Mir Qasim disappeared into impoverished obscurity.
- Shah Alam II realigned himself with the British, and Shuja-ud-Daula fled west hotly pursued by the victors. The whole Ganges valley lay at the Company's mercy, Shah Shuja eventually surrendered. Henceforth Company troops became the power-brokers throughout Awadh as well as Bihar. Hence, statement (3) is correct.

Therefore, the correct answer is (c).

**48. Ans. B**

**Exp:** Lord Cornwallis was the Governor-General of Bengal from 1786-1793. The Cornwallis Code is a body of legislation enacted in 1793 by the East India Company to improve the governance of its territories in India

- The aim of the Cornwallis Code was to introduce an institutional code of law and an administrative system suitable for the British colonial state. This Code led to the establishment of the sovereignty of law. Hence, statement (1) is correct.
- The system, as codified in these regulations, provided that the East India Company's service personnel be divided into three branches: revenue, judicial, and commercial. The revenue or taxation court under the collector was abolished and revenue cases were brought under the jurisdiction of a district judge.

- Simultaneously, the judicial powers of the board of revenue were abolished, and vested under the purview of the civil court. Hence, statement (2) is correct.
- Until 1793, a British citizen could only be tried by the Supreme Court of Calcutta, and no Indian could file a case against any employee of the English Company. This discrimination was removed, and everyone was declared equal in the eye of law. The natives were entitled to file a case against government officials, and even against the government itself. Hence, Statement (3) is not correct.
- Every official, including the government subjects was made to be answerable for their acts done in an official capacity to the civil court. Hence, statement (4) is correct.

Therefore, the correct answer is (b).

#### 49. Ans. D

**Exp:** CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. Roughly 5,800 species of animals and 30,000 species of plants are protected by CITES against over-exploitation through international trade.

They are listed in the three CITES Appendices. The species are grouped in the Appendices according to how threatened they are by international trade. They include some whole groups, such as primates, cetaceans (whales, dolphins and porpoises), sea turtles, parrots, corals, cacti and orchids. There are 155 bird species in Appendix I of CITES.

- As an environmental treaty under the aegis of the United Nations Environment Programme, Convention on the Conservation of Migratory Species of Wild Animals (CMS) provides a global platform for the conservation and sustainable use of migratory animals and their habitats. Migratory species

threatened with extinction are listed on Appendix I of the Convention. There are about 300 avian/ bird species covered by the CMS.

- The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat is an international treaty for the conservation and sustainable use of wetlands. It is also known as the Convention on Wetlands. Under Article 4 of the convention, each Contracting Party shall promote the conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening.

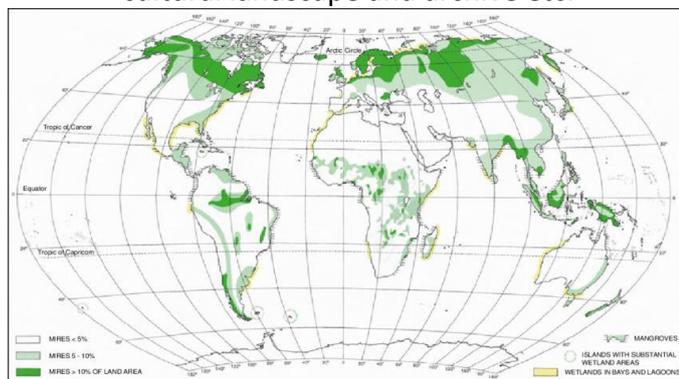
#### 50. Ans. D

**Exp:** Peats are a heterogeneous mixture of plant material (vascular plants, mosses and humus) that had accumulated in a water-saturated area and are only partially decomposed due to absence of oxygen. The natural areas covered by peat are called peatlands. Various types of peat are – swamp forests, fens, bogs or mires. They form where climate, bedrock and relief create an area with permanent water saturation i.e. either in shallow water over layers of lake sediments or directly on mineral soil.

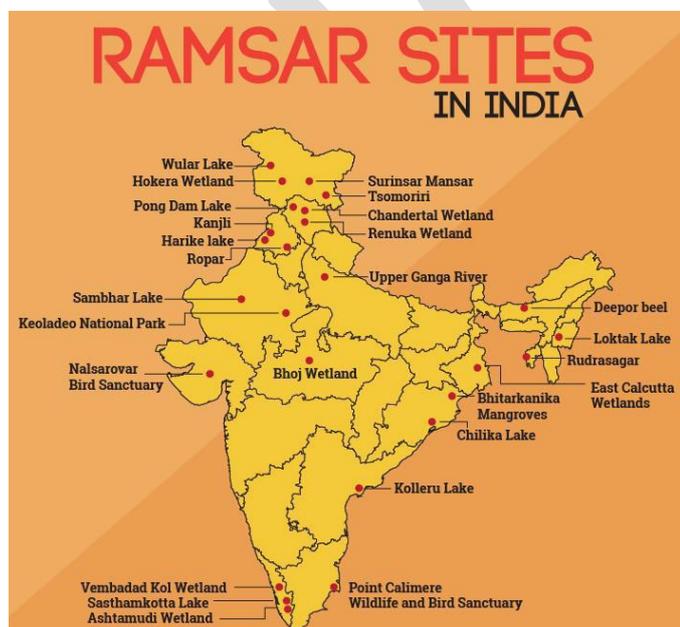
- Peatlands are the largest natural terrestrial carbon store; the area covered by near-natural peatland worldwide sequesters 0.37 gigatonnes of carbon dioxide a year – storing more carbon than all other vegetation types in the world combined. By conserving, protecting and restoring peatlands globally, we can reduce emissions and revive an essential ecosystem that provides many services, for people, the planet and the climate—including their vital role as a natural carbon sink. Hence, statement 1 is correct.
- They are mostly found in permafrost regions towards the poles and at high altitudes, in coastal areas, beneath tropical rainforest and in boreal forests. Countries with the largest peatland areas

are – Russia, Canada, Indonesia, USA, Finland etc. Hence statement 2 is not correct.

- Recently, the Brazzaville Declaration was signed to promote better management and conservation of Cuvette Centrale Region in the Congo Basin. It was jointly signed by Democratic Republic of Congo (DRC), the Republic of Congo and Indonesia. Hence statement 3 is correct.
- Peatlands are important for Carbon Storage, Supporting unique and critically threatened biodiversity, supporting water cycle, supporting livelihood, as a cultural landscape and archive etc.



51. Ans. B



52. Ans. A

**Exp:** Statement 2 is incorrect: Anti-radiation missiles are designed to detect, track and neutralize the adversary's radar, communication assets and other radio

frequency sources, which are generally part of their air defence systems.

Such a missile's navigation mechanism comprises an inertial navigation system — a computerized mechanism that uses changes in the object's own position — coupled with GPS, which is satellite-based.

For guidance, it has a "passive homing head" — a system that can detect, classify and engage targets (radio frequency sources in this case) over a wide band of frequencies as programmed.

### RUDRAM

- India's first indigenous anti-radiation missile, RUDRAM, developed for the Indian Air Force, was successfully flight-tested from a Sukhoi-30 MKI jet recently.
- Rudram is an air-to-surface missile, designed and developed by the Defence Research and Development Organization (DRDO).
- Once the Rudram missile locks on the target, it is capable of striking accurately even if the radiation source switches off in between. The missile has an operational range of more than 100 km, based on the launch parameters from the fighter jet.
- While the system has been tested from a Sukhoi-30 MKI, it can be adapted for launch from other fighter jets too.
- Rudram has been developed for the IAF's requirement to enhance its Suppression of Enemy Air Defence (SEAD) capability.

53. Ans. D

**Exp:** Option (b) is correct: A gynandromorphy is an organism that has either male and female characteristics or male-female chimaera. It is often seen in insects, though gynandromorphic birds, snakes, lobsters and other animals have been observed, too.

### Rose-Breasted Grosbeak

- Biologists have found a rare Rose-breasted Grosbeak, a bird with both

female and male plumage colours, in the United States' Pennsylvania.

- The Rose-breasted Grosbeak derives its name from the male of the species who have a ruby-red triangular marking on a white chest and dark black wings with pink wing pits. The females are much less showy, with no patches on its beige body, brown wings and yellow wing pits.
- Rose-breasted grosbeaks are sexually dimorphic, meaning they have both males and females have different colour plumage.
- Breeding habitat consists of cool-temperate open deciduous woods throughout much of eastern North America, with migration to tropical America in winter.
- Its IUCN status is Least Concern.
- The condition is called bilateral gynandromorphism, means the bird is both male and female, with one ovary and one testis. This occurs when two sperm fertilize an egg that has two nuclei instead of one, which results in the egg to develop a chromosome from each sex.

**54. Ans. A**

**Exp:** Variability of insolation at the surface of the Earth - the amount and the intensity of insolation vary during a day, in a season and in a year. The factors that cause these variations in insolation are:

- The rotation of the Earth on its axis.
- The angle of inclination of the sun's rays
- The length of the day
- The transparency of the atmosphere
- The configuration of land in terms of its aspect
- The last two, however, have less influence.

Thus, statement 4 is incorrect, and statements 1, 2, 3 and 5 are correct.

**55. Ans. C**

**Exp:** The Himalayas work as a barrier to the frigid katabatic winds, which blow down from Tibet and Central Asia. The Tropic of Cancer passes through the middle of the country,

and this makes its climate more tropical. India's climate has characteristics of tropical as well as subtropical climates.

Further, India's vast coastline leads to a moderating influence on India's climate and thus results in milder winters as compared to Central Asia.

Thus, statements 1, 2 and 4 are correct. Continentality leads to extreme climatic conditions. Thus, it cannot be a factor for India experiencing milder winters.

Thus, statement 3 is incorrect.

**56. Ans. C**

**Exp:** Elevation or Altitude: Normally, climatic conditions become less dense and colder as altitude increases. "Life zones" on a high mountain reflect the changes, plants at the base are the same as those in the surrounding countryside, but no trees at all can grow above the timberline. Snow crowns the highest elevations.

Prevailing global wind patterns and pressure system: The pressure and wind system of any area depends on the latitude and altitude of the place. High pressure leads to dry and windless conditions, whereas low pressure leads to wet and windy conditions. Thus, it influences the temperature and rainfall pattern.

Latitude and angles of the sun-rays: As the Earth circles the sun, the tilt of its axis causes changes in the angle at which Sun's rays contact the Earth and hence changes the daylight hours at different latitudes. Polar regions experience the most significant variation, with long periods of limited or no sunlight in winter and up to 24 hours of daylight in the summer.

Topography and relief features: The Topography of an area can significantly influence our climate. Mountain ranges are natural barriers to air movement, and thus moisture laden winds on striking these

barriers result in the rainfall (orographic rainfall).

Oceanic influence: The Sea exerts a moderating influence on the climate. As the distance from the sea increases, its moderating influence decreases and the people experience extreme weather conditions. This condition is known as continentality (i.e. very hot during summers and very cold during winters). This happens because of the low Specific Heat Capacity of land as compared to that of water.

This means that land heats up and cools down faster than water. Thus, during daytime land has a higher temperature and water in the oceans has a lower temperature, thus the wind blowing from the sea to the shore results in a moderating influence.

Ocean currents and masses along with onshore winds affect the climate of the coastal areas, for example, any coastal area with warm or cold currents flowing along it will be warmed or cooled due to the winds that are onshore.

Longitude is used to calculate the time at a place and does not affect the climate. Though it can be used to pinpoint the exact location of the climate/weather, it has no role to play in the formation of the climate there.

Vegetation can affect climate and weather patterns due to the release of water vapour during photosynthesis. The release of vapour into the air alters the surface energy fluxes and leads to potential cloud formation.

Clouds alter the amount of sunlight or radiation that can reach the Earth, affecting the Earth's energy balance, and in some areas can lead to precipitation. Vegetation is also a manifestation of the prevailing climatic condition. Different types of climatic regions have different vegetations.

Thus, option c is correct.

**57. Ans. D**

**Exp:** The SDR is neither a currency nor a claim on the IMF. Instead, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies. Hence statement 1 is incorrect.

The SDR was initially defined as equivalent to 0.888671 grams of fine gold—which, at the time, was also equivalent to one U.S. dollar. Hence statement 2 is correct.

During the last review concluded in November 2015, the Board decided that the Chinese renminbi (RMB) met the criteria for inclusion in the SDR basket and hence it's included in the basket. Hence statement 3 is incorrect. The SDR serves as the unit of account of the IMF and some other international organisations like Asian Development Bank and IFAD.

Hence statement 4 is correct.

**58. Ans. D**

**Exp:** Headline inflation or demand-pull inflation is the general rise in price level at the retail level of an economy. This happens in an expanding economy and is calibrated using the consumer price index (CPI).

Core inflation is a measure of inflation which does not include CPI components such as food, energy, fuel, etc. It is the more stable variant and focuses on general increase in price levels over the long-term. Hence statement 1 is incorrect.

Headline inflation contains all items including items like food and oil, whose prices are highly volatile. Core inflation does not contain the above said volatile items. So it gives more real data, a clearer picture of the economy.

Hence statement 2 is incorrect.

**59. Ans. D**

**Exp:** The revenue receipts that are not generated by the taxes of the public is called

non-tax revenue receipts. This is the money that the government earns as profits and dividends from making a profit through public enterprises.

The interest that the government earns on the money lent to its internal or external borrowers. It also includes the money that the government earns through its general services like irrigation, power distribution, insurance, banking services, community services, etc.

Non-tax revenue receipts also comprise of the money that is accrued by the government in the form of penalties, fees, fines, etc. Hence statements 1, 2 and 3 are correct.

In current times, the spectrum auction has contributed mainly to the non-tax revenues. It has been one of their primary sources.

Hence statement 4 is correct.

**60. Ans. D**

**Exp:** Article 75(1) states that there shall be a Prime Minister appointed by the President, but the procedure for selection and appointment is nowhere explicitly mentioned in the Constitution. So, statement (1) is correct.

However, according to the conventions of the parliamentary system of government, the President appoints the Leader of the majority party in the Lok Sabha as the Prime Minister. So, statement (2) is correct.

The Prime Minister can be a member of either of the two Houses of Parliament in India. For example, three Prime Ministers, Indira Gandhi (1966), Deve Gowda (1996) and Manmohan Singh (2004), were members of the Rajya Sabha. In Britain, on the other hand, the Prime Minister should definitely be a member of the Lower House (House of Commons). So, statement (3) is correct.

Therefore, the correct answer is (d).

**61. Ans. C**

**Exp:** Article 74 states that: There shall be a Council of Ministers with the Prime Minister at the head to aid and advise the President who shall, in the exercise of his functions, act following such an advice. However, the President may require the Council of Ministers to reconsider such advice and the President shall act under the advice tendered after such reconsideration. So, Statement (1) is not correct.

The advice tendered by Ministers to the President shall not be inquired into in any court of law. So, statement (2) is correct.

Article 75 states that: The Prime Minister shall be appointed by the President and the other Ministers shall be appointed by the President on the advice of the Prime Minister. The Ministers shall hold office during the pleasure of the President. So, statement (4) is correct.

The Council of Ministers shall be collectively responsible to the Lok Sabha and not to the Parliament. So, Statement (3) is not correct.

Therefore, the correct answer is (c).

**62. Ans. A**

**Exp:** Cabinet Committees are an organisational device to reduce the enormous workload of the Cabinet. They also facilitate in-depth examination of policy issues and effective coordination. They are based on the principles of division of labour and effective delegation.

They are extra-constitutional in emergence. In other words, they are not mentioned in the Constitution. However, the Rules of Business provide for their establishment. So, statement (1) is correct.

**63. Ans. B**

**Exp:** The Wahabi Movement was started by Syed Ahmed, (1786-1831) of Rai Bareilly in the 1820s in India. Syed Ahmed of Rai Bareilly, the leader of this movement was

influenced by the teaching of Abdul Wahab of Arabia, but even more by the preaching of the Delhi saint Shah Waliullah. The Wahabi Movement was revivalist. Hence, statement (1) is correct.

Patna was an important centre of the Movement though it had its missions in Hyderabad, Madras, Bengal, UP and Bombay. Hence, statement (2) is correct.

The Movement did not support the cause of the tenants as the **Movement was aimed at reviving and restoring Muslim power in India** by bringing about the overthrow of the Sikhs in Punjab and the British in Bengal. Since Dar-ul-Harb (land of kafirs) was to be converted into Dar-ul-Islam (land of Islam), Jihad was declared against the Sikh kingdom of Punjab. Hence, Statement (3) is not correct.

A countrywide organisation with an elaborate secret code for its working under four spiritual vice-regents (called Khalifas) was set up and Sithana in the north-west tribal belt was chosen as a base for operations. Hence, statement (4) is correct.

Therefore, the correct answer is (b).

**64. Ans. C**

**Exp:** The Young Bengal was a group of radical Bengali free thinkers, which drew inspiration from the French Revolution, emerging from Hindu College, Calcutta.

- They were also known as Derozians, after Henry Louis Vivian Derozio
- His teachings inspired the development of the spirit of liberty, equality, and freedom. They also tried to remove social evils, improve the condition of the women and the peasants, and promote liberty through freedom of the press, trial by jury, oppose decadent customs and traditions like drinking wine was not a bad thing and so on. So, statement (1) is correct.
- However, they failed to have a long term impact. Derozio was removed from the

Hindu College in 1829 because of radicalism. The main reason for their limited success was social conditions prevailing at that time which were not ripe for the adoption of radical ideas.

- Moreover, they failed to take up the peasant's cause. The radicalism was bookish. As a result, they could not establish a deep connection with the masses. So, Statement (2) is not correct.
- Given the ideologies propagated by the Deozians, which were to serve as a guiding light for modern India, Surendranath Banerjee described the Derozians as the pioneers of the modern civilisation. So, Statement (3) is not correct.

Therefore, the answer is (c).

**65. Ans. B**

**Exp:** Lord Macaulay was the first law member of the Governor-General in Council. He was appointed as the head of the General Committee of Public Instruction.

During the first quarter of the nineteenth century, a great controversy was going on regarding the nature of education and the medium of instruction in schools and colleges. The Orientalists led by Dr. H.H. Wilson and H.T. Prinsep advocated in favour of Sanskrit, Arabic and Persian as the medium of education.

While the Anglicists advocated for the study of western education with English as the medium of instruction. In his famous Minute of 2nd February 1835, Macaulay fired the final shot of the battle between the Orientalists and Anglicists. He gave his verdict in favour of the Anglicists. So, Statement (1) is not correct.

Macaulayan system intended to educate the upper and middle classes who were likely to take up the task of educating and spreading modern ideas among them. The opinion that education always filters down from the upper classes of the society to the common masses was known as 'Downwards Filtration Theory'.

Macaulay had faith in the downward filtration theory. He wrote in his minute, "We must do our best to form a class who may be interpreters between us and the millions, whom we govern, a class of persons, Indian in blood and colour, but English in taste, in opinions, in morals and in intellect." So, statement (2) is correct.

Therefore, the correct answer is (b).

**66. Ans. D**

**Exp:** The Non-state Actor Zone for Climate Action (NAZCA) is an online portal hosted by the United Nations Framework Convention on Climate Change (UNFCCC). It highlights actions that cities, companies, investors, and regions – non-state actors – are taking to address climate change. Showing non-state climate ambition provides momentum to the climate talks and helps give governments the confidence to sign ambitious agreements at the Paris climate negotiations (COP 21).

The portal covers the Parties of the (UN Climate Change) Convention. Currently, the EU is represented in the portal by its members. Announced initiatives represent initiatives announced at major climate action events and summits that have not yet been reported through one of the portal's data providers.

The portal helps provide transparency and accountability for new initiatives and facilitates tracking their progress and impact. The first major step in this regard is the requirement that announcements are registered through one of the portal's data providers within a fixed timeframe.

Announcements are highlighted across the web site through grey shading.

Hence all the three statements are correct.

**67. Ans. C**

**Exp:** Recently, the 14th Conference of Parties (COP14) to United Nations Convention to Combat Desertification (UNCCD) was

concluded in Greater Noida in India. In an unprecedented global campaign to save productive land, country parties have agreed to make the Sustainable Development Goal target of achieving land degradation neutrality by 2030 a national target for action. This year, India being the global host for COP 14 took over the COP Presidency from China for the next two years till 2021.

COP 14 also adopted a landmark decision to buttress global efforts to better mitigate and manage the risks of drought and to build resilience. Attention was also drawn to the role, the private sector plays in land restoration going forward, including through promoting sustainable value chains, as well as the incentives that will draw them in, such as the regulation in support of innovation for sustainable land management and rewarding conservation, restoration and sustainable use of resources.

Hence both the statements are correct.

**68. Ans. B**

**Exp:** Bharat stage emission standards (BSES) are emission standards to regulate the pollutants from internal combustion engines and Spark-ignition engines equipment, including motor vehicles. The standards and the timeline for implementation are set by the Central Pollution Control Board under the Ministry of Environment, Forest and Climate Change BS-VI norms are the latest in series of emission standards which were first introduced in 2000.

- Statement 1 is not correct: BS-VI allows a maximum sulphur content of 10 ppm as compared to 50 ppm under BS-IV.
- Oxides of nitrogen (NO<sub>x</sub>), produced as a result of combustion, will be brought down by 70 per cent for diesel, and 25 per cent for petrol engines. Another significant change will be the presence of OBD (On board Diagnostics) and RDE (Real Driving Emission) on all vehicles, enabling real-time tracking of emissions.
- Statement 2 is correct: The Ministry of Road Transport & Highways has

exempted the armoured and other specialised vehicles of Indian armed forces and paramilitary forces from the new stringent vehicular emission norms (BS-VI).

- The exemption has been granted because these vehicles operate in remote and inhospitable terrains with most challenging operational and environmental conditions. Due to security challenges and requirements of specialized operations, the development of suitable engine compliant with the above norms would require considerable time. Further, it is difficult to maintain the ideal transportation and storage conditions of fuel in these conditions.
- Statement 3 is not correct: International Centre for Automotive Technology (ICAT) is the premier testing and certification agency authorized by Ministry of Road Transport and Highways for providing testing and certification services to the vehicle and component manufacturers in India and abroad.
- ICAT released India's first Type Approval Certificate (TAC) for Bharat Stage - VI (BS - VI) norms for the two wheeler segment.

**69. Ans. C**

**Exp:** Statement 1 is incorrect: Dandiya Raas is played with pair of colourfully decorated sticks, while Garba consists of various hand and feet movements. While Garba is performed by women, men and women join in for Dandiya.

- Statement 2 is incorrect: Most of the Dandiya steps require even number of people, while in Garba there is no such requirement on number of people.

**Garba**

- This will be for the first time in the recent history of Gujarat that there will be no Garba during the Navaratri, which is its essential element and which the state government has branded as the 'Longest Dance Festival of the World'.

- Garba is a form of dance which originated in Traditional garbasare performed around centrally lit lamp or a picture or statue of the Goddess Shakti.
- Women normally perform it in a graceful and rhythmic manner in a circle as they rotate around the object placed in the centre. The dancer's whirl and move their feet and arms in a choreographed manner to the tune of the music with lots of drum beats.
- The women wear traditional dresses such as colourful embroidered choli, ghagra and bandhani dupattas dazzling with mirror work and heavy jewellery.

**70. Ans. B**

**Exp:** Option (b) is correct

**Cotton Four**

- Cotton is discussed at the WTO on two tracks: 1) the trade reforms needed to address subsidies and high trade barriers for cotton, and 2) the assistance provided to the cotton sector in developing countries.
- The trade aspects of cotton are handled by the Committee on Agriculture in Special Session including through dedicated discussions on trade in cotton. The development assistance aspects of cotton are discussed in the meetings of the "Director-General's Consultative Framework Mechanism on Cotton".
- These various tracks of discussion have been developed over the years as a response to a series of proposals to address the sector tabled by four African countries — Benin, Burkina Faso, Chad and Mali — known as the Cotton Four or C4.

**71. Ans. B**

**Exp:** The core of the optical fibre is surrounded by a layer called the 'cladding', which has a refractive index less than that of the core is one of the conditions for total internal reflection of light.

**72. Ans. A**

**Exp:** Jet Stream is a geostrophic wind blowing horizontally through the upper layers of the troposphere, generally from west to east, at an altitude of about 12000 m. Thus, statement 1 is incorrect.

Jet Streams develop where air masses of differing temperatures meet. So, usually, surface temperatures determine where the Jet Stream will form. Higher the difference in temperature, faster is the wind velocity inside the jet stream. Jet Streams extend from 20 degrees latitude to the poles in both hemispheres.

The western cyclonic disturbances are weather phenomena of the winter months brought in by the westerly flow (jet streams) from the Mediterranean region. They usually influence the weather of the north and north-western regions of India and bring about winter rainfall in these regions. Thus, statement 2 is correct.

The burst of monsoons depends upon the upper air circulation which is dominated by Sub Tropical Jet Streams (STJS). The south-west monsoon coming in India is related to tropical easterly stream. It blows between 8°- 35° North latitudes. The north-east monsoon (winter monsoon) is related to the subtropical westerly Jet Stream which blows between 20° and 35° latitudes in both hemispheres. Thus, statement 3 is correct.

**73. Ans. D**

**Exp:** From the above figure, it is clear that Raipur (21.2°N, 81.7°E) is closest to IST longitude (82.5° E) amongst given options.

**74. Ans. B**

**Exp:** The tropic of Cancer passes through 8 Indian states Madhya Pradesh, Gujarat, Rajasthan, Chhattisgarh, Jharkhand, West Bengal, Tripura, Mizoram. Thus, option b is correct.



**75. Ans. B**

**Exp:** Statement a is the investment multiplier which attempts to quantify the additional effects of a policy beyond those immediately measurable. The larger an investment's multiplier, the more efficient it is at creating and distributing wealth throughout an economy.

Statement c is the definition of a balanced budget.

Statement d is the definition of equity multiplier which is a measure of financial leverage of a company.

Statement b is correct. Balanced Budget Multiplier is the ratio of the change in aggregate output (GDP) to a change in government spending, which is matched by an equal change in taxes. It is termed so because the change in spending is matched by the change in taxes, and thus the government's budget deficit or surplus is neither increased nor decreased.

**76. Ans. C**

**Exp:** Statement 1 is Frictional Unemployment and statement 2 is Cyclical Unemployment.

Voluntary Unemployment is a situation where a person is able to but not willing to work at the prevailing wage rates and waits

for a better job opportunity. Hence statement 4 is incorrect.

Structural unemployment is largely defined as unemployment that results from perceived value and skills that an individual brings to a job against the needed, different skills required by an employer to do the job correctly. Job skills are, after all, dynamic, and over time new skills replace current but ageing skills no longer needed by an employer. These newer skills are required by employers to succeed in the marketplace.

Cyclical unemployment is similar to structural unemployment in that the business cycle is highly dynamic too, and changes all the time. When the economy is on the upswing, companies hire more workers, and the unemployment rate spikes upward. Conversely, when the economy is spiralling downward, the unemployment rises, as companies let workers go, and stop hiring at an accelerated rate, as they would in robust economic periods.

Short-term factors involved in figuring out the nation's unemployment rate fall under the term "frictional unemployment." This form of unemployment relates to the jobless rate that moves upward as career professionals drift between jobs for a variety of reasons, including:

- Workers who move to another state, city, or town and are looking for a new job.
- Workers who leave their jobs with a goal of finding a better one.
- College graduates with advanced degrees who, after earning a post-graduate degree, return to the workforce when they find a new job related to their studies.

**77. Ans. D**

**Exp:** The Preamble to the Constitution describes the Indian State as Sovereign. The concept of sovereignty is closely related to the problematic concepts of State and government and of independence and democracy. Sovereignty is the full right and

power of a governing body over itself, without any interference from outside sources or bodies. In political theory, sovereignty is a substantive term designating supreme authority over some polity. So, statement (1) is correct.

Essential facets of sovereignty are the ability of a State to acquire territory and also cede its territory. Indian Constitution gives the power to the State to acquire territory under Article 2. So, statement (2) is correct.

India can also cede a territory by way of an Amendment of the Constitution under Article 368 as held by the Supreme Court in Re: Berubari Union Case, 1960. So, statement (3) is correct.

Therefore, the correct answer is (d).

**78. Ans. B**

**Exp:** The President is the head of the State. Hence, all the executive actions of the Government of India are formally taken in the name of the President. The President appoints the Prime Minister and the other ministers. They hold office during his pleasure. So, statement (1) is correct.

The President can make rules for the more convenient transaction of business of the Union Government (and not the Parliament), and for allocation of the said business among the Ministers. So, Statement (2) is not correct.

The President appoints the Attorney General of India and determines his remuneration. The Attorney General holds office during the pleasure of the President. So, statement (3) is correct.

Therefore, the correct answer is (b).

**79. Ans. D**

**Exp:** The Sarus crane is the tallest flying bird in the world standing 152-156 cm tall with a wingspan of 240cm. It has a predominantly

grey plumage with a naked red head and upper neck and pale red legs.

Females are smaller, growing to about 35-40kg, while the males grow bigger, up to 40-45kg. It is a social creature, found mostly in pairs or small groups of three or four.

- Known to mate for life with a single partner, its breeding season coincides with heavy rainfall in monsoon. Nests are constructed on the water in natural wetlands or in flooded paddy fields. Usually, a clutch has only one or two eggs, which are incubated by both parents for a period of 26 to 35 days. The juveniles follow their parents from the day of birth.
- The Sarus crane has three disjunct populations in the Indian sub-continent, south-east Asia and northern Australia with an estimated global population of 25,000-37,000 individuals. In the Indian subcontinent, it is found in northern and central India, Terai Nepal and Pakistan. It was once a common sight in the paddy fields of Uttar Pradesh, Bihar, Rajasthan, West Bengal, Gujarat, Madhya Pradesh and Assam. Their population is now on the decline with only 15,000-20,000 found in India, a majority of which are in Uttar Pradesh. The Sarus crane is known for its ability to live in association with humans, inhabiting open, cultivated, well-watered plains, marshlands and jheels. These areas suit them well for foraging, roosting and nesting.
- It is listed in Schedule IV of the Wildlife (Protection) Act 1972 and as Vulnerable on IUCN Red List
- Hence all the statements given in the question are correct.

**80. Ans. B**

**Exp:** Scientists have spotted a new species of signal fish, the first one of genus recorded in Indian waters.

Although more than 2450 species of marine fishes have been discovered in India so far, this is the first time they have spotted the

presence of a signal fish, off the Kerala coast. Scientists from the University of Kerala and the Ocean Science Foundation, USA have reported the discovery of the new species of signal fish, the first one of the genus recorded in Indian water.

- The signal fishes are spotted in the coral reefs. The newly identified signal fish, *Pteropsaron indicum*, also has bold yellow markings on its body to grab the attention of its fellow mates. The species are typically tiny and fragile (most less than 50 mm SL, and some less than 30 mm SL) and usually found below normal diving depths, more than 50 m deep. So it indicates the presence of patchy corals off the Kerala coast
- The discovered species is the world's largest signal fish and the unexplored features and rarity of this species opens up new avenues of research in marine biodiversity in India.

**81. Ans. C**

**Exp:** A nomadic life of human beings characterises the Paleolithic and Mesolithic age. Hunting and fishing were the means of subsistence. This changed in Neolithic age which is known for the practice of agriculture. Mehrgarh is the earliest Neolithic site (7000 BCE) found in the Indian subcontinent.

It is one of the earliest sites with evidence of farming and herding. Many varieties of domesticated wheat have been found in excavations. Also, the Neolithic sites from Ganga plains provide evidence of cultivation of rice, barley etc. So, statement (1) is correct.

This also influenced the social life of human beings. The growth of agriculture made permanent houses possible. People started living a sedentary life. They also started practising pastoralism and domestication of animals.

This led to the development of family life and the evolution of societies. This remarkable

development has been termed as a Neolithic revolution by a section of historians. So, statement (2) is correct.

Hence, the correct answer is (c).

**82. Ans. B**

**Exp:** Most Upanishadic thinkers were men, especially brahmins and rajas. Occasionally, there is mention of women thinkers, such as Gargi, who was famous for her learning and participated in debates held in royal courts.

She was a Vedic prophetess and daughter of sage Vachaknu. She also composed several hymns that questioned the origin of all existence. So, option (b) is correct.

**83. Ans. A**

**Exp:** The Early Vedic period is referred to the period from 1500 - 1000 BCE. The society in the Early Vedic period was egalitarian in nature. The women enjoyed a position of respect and esteem. Education was equally open for boys and girls. Girls studied the Veda and fine arts. Women never observed purdah in the Vedic period.

They enjoyed freedom in selecting their mates. Women participated in different religious ceremonies along with their husbands. They also took part in social assemblies such as Sabha and Samiti. This status changed gradually in the Later Vedic period. So, statement (1) is correct.

However, it was a patriarchal society in which a father headed a family which was regarded as a social and political unit. The term used for a family is Kula and its head is known as Kulapati. So, Statement (2) is not correct.

Hence, the correct answer is (a).

**84. Ans. C**

**Exp:** The book Dhammapada, which is a part of Sutta Pitaka, contains sayings of Buddha. Sutta Pitaka also contains many other discourses given by Gautam Buddha. So, statement (a) is not correct.

Rules and regulation for the proper conduct of monastic life are given in Vinaya Pitaka. It deals with individual life of a bhikkhu/bhikkhuni, organization of monastery and also the relationship between sangha and the laity. So, statement (b) is not correct.

Abhidhamma Pitaka is the third Buddhist Pitaka. They provide scholastic reworking and classifications, of doctrinal material appearing in the earlier Suttas. The topics dealt with in Abhidhamma books include ethics, psychology, and epistemology. It is sometimes also called as Buddhist Psychology. So, statement (c) is correct.

The dialogue between Milind and Nagsen about the meaning of Dhamma is given in a book called Milind Panho, which was composed long after the Pitakas were compiled. So, statement (d) is not correct.

Therefore, the answer is (c).

**85. Ans. D**

**Exp:** A base year is a normal year without much fluctuation in price and output which helps in calculation of the GDP at a constant price i.e. Real GDP. It eliminates the impact of inflation and helps in calculating the real rate of growth.

India's first base year was 1948-49 and the most recent one is 2011-12. It is desired that the base year should be as recent as possible to reflect the changing dynamics of the economy. Therefore all the options are correct i.e. d.

**86. Ans. C**

**Exp:** Both statements are correct

**Tubarial Salivary Glands**

- Researchers at the Netherlands Cancer Institute have identified a set of salivary glands deep in the upper part of the throat and have named them "tubarial salivary glands".

- The discovery may be important for cancer treatment. So far, this nasopharynx region — behind the nose — was not thought to host anything but microscopic, diffuse, salivary glands.
- The newly discovered glands are about 1.5 inches (3.9 centimeters) in length on average and are located over a piece of cartilage called the torus tubarius.
- The glands probably lubricate and moisten the upper throat behind the nose and mouth.
- Until now, there were three known large salivary glands in humans: one under the tongue, one under the jaw and one at the back of the jaw, behind the cheek.
- The new organ was discovered while scientists were studying prostate cancer cells using PSMA PET-CT technology — a combination of CT scans and positron emission tomography (PET) — which is good in detecting salivary gland tissues.
- In this technique, a radioactive “tracer” is injected into the patient that binds to the protein PSMA, which is elevated in prostate cancer cells.

**87. Ans. C**

**Exp:** Statement 1 is incorrect: The ICAI functions under the administrative control of the Ministry of Corporate Affairs, Government of India.

- Statement 2 is incorrect: The ICAI is the second largest professional body of Chartered Accountants in the world, with a strong tradition of service to the Indian economy in public interest.

**Institute of Chartered Accounts of India (ICAI)**

- The Union Cabinet recently approved the mutual recognition agreement between the Institute of Chartered Accountants of India (ICAI) and Malaysian Institute of Certified Public Accountants (MICPA). This would enable appropriately qualified chartered accountant members of either institutes to join the other by receiving

appropriate credit for their existing accountancy qualification.

- The Institute of Chartered Accountants of India (ICAI) is a statutory body established by an Act of Parliament, viz. The Chartered Accountants Act, 1949 for regulating the profession of Chartered Accountancy in the country.
- The Institute, functions under the administrative control of the Ministry of Corporate Affairs, Government of India.
- The ICAI is the second largest professional body of Chartered Accountants in the world, with a strong tradition of service to the Indian economy in public interest.
- ICAI is the only licensing cum regulating body of the financial audit and accountancy profession in India. It recommends the accounting standards to be followed by companies in India to National Financial Reporting Authority.

**88. Ans. D**

**Exp:** A biofuel is a fuel that is produced through contemporary processes from biomass, rather than a fuel produced by the very slow geological processes involved in the formation of fossil fuels, such as oil.

The Third Generation of biofuels is based on improvements in the production of biomass (1st and 2nd generations of biofuels). It takes advantage of specially engineered energy crops such as algae as its energy source. The algae are cultured to act as a low-cost, high-energy and entirely renewable feedstock. It is predicted that algae will have the potential to produce more energy per acre than conventional crops.

Algae can also be grown using land and water unsuitable for food production, therefore reducing the strain on already depleted water sources. A further benefit of algae-based biofuels is that the fuel can be manufactured into a wide range of fuels such as Diesel, Petrol, Jet fuel, Butanol, Methane, Ethanol, Vegetable oil, Gasoline, etc.

So, the correct answer is (d).

**Note:** First Generation Biofuels: made from sugar, starch, vegetable oil, or animal fats  
Second Generation Biofuels: produced from non-food crops, such as cellulosic biofuels and waste biomass (stalks of wheat, rice, etc.)

**89. Ans. B**

**Exp:** Statement 1 is correct: Extra tropical cyclones form along the polar front. In the northern hemisphere, warm air blows from the south and cold air from the north of the front. When the pressure drops along the front, the warm air moves northwards and the cold air move towards, south setting in motion an anticlockwise cyclonic circulation. The cyclonic circulation leads to a well-developed extra tropical cyclone, with a warm front and a cold front.

- The extra tropical cyclone differs from the tropical cyclone in number of ways:
- The extra-tropical cyclones have a clear frontal system which is not present in the tropical cyclones.
- They cover a larger area and can originate over the land and sea, whereas the tropical cyclones originate only over the seas and on reaching the land they dissipate.
- The extra-tropical cyclone affects a much larger area as compared to the tropical cyclone.
- The wind velocity in a tropical cyclone is much higher and it is more destructive.
- Statement 2 is not correct: The extra tropical cyclones move from west to east but tropical cyclones, move from east to west.
- Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large-scale destruction caused by violent winds, very heavy rainfall and storm surges.
- Statement 3 is correct: The conditions favourable for the formation and intensification of tropical storms are:

- Large sea surface with temperature higher than 27° C
- Presence of the Coriolis force (hence statement 3 is correct)
- Small variations in the vertical wind speed
- A pre-existing weak low-pressure area or low-level-cyclonic circulation
- Upper divergence above the sea level system.

**90. Ans. D**

**Exp:** Saline Soils are also known as Usara soils. Saline soils contain a larger proportion of sodium, potassium, and magnesium, and thus, they are infertile and do not support any vegetative growth.

- They have more salts, largely because of the dry climate and poor drainage. They occur in arid and semiarid regions, and in waterlogged and swampy areas.
- Their structure ranges from sandy to loamy. They lack nitrogen and calcium. Saline soils are more widespread in western Gujarat, deltas of the eastern coast and in Sunderban areas of West Bengal.
- In the Rann of Kuchchh, the Southwest Monsoon brings salt particles and deposits there as a crust. Hence option 1 is correct.
- Seawater intrusions in the deltas promote the occurrence of saline soils. Hence option 2 is correct.
- In the areas of intensive cultivation with excessive use of irrigation, especially in areas of the green revolution, the fertile alluvial soils are becoming saline. Excessive irrigation with dry climatic conditions promotes capillary action, which results in the deposition of salt on the top layer of the soil. In such areas, especially in Punjab and Haryana, farmers are advised to add gypsum to solve the problem of salinity in the soil. Hence option 3 is correct.

**91. Ans. A**

**Exp:** Several religious groups that emerged during the period of the thirteenth to seventeenth-century criticised the ritual and other aspects of conventional religion and the social order, using simple, logical arguments. Among them were the Nath panthis, Siddhacharas and Yogis. All of them advocated renunciation of the world. So, statement 1 is correct.

To them, the path to salvation lay in meditation on the formless Ultimate Reality and the realisation of oneness with it. To achieve this, they advocated intense training of the mind and body through practices like yogasanas, breathing exercises and meditation. So, statement 2 is correct.

These groups became particularly popular among “low” castes. So, statement 3 is not correct.

Bhakti saint-poets rejected all forms of ritualism, outward display of piety and social differences based on birth. Most of them even rejected the idea of renunciation and preferred to live with their families, earning their livelihood like any other person, while humbly serving fellow human beings in need.

A new humanist idea emerged as they insisted that bhakti lay in sharing others’ pain. However, it was not the Nath panthis, Yogis and Siddhas who focussed on sharing pain. So, statement 4 is not correct.

Therefore, the correct answer is (a).

**92. Ans. B**

**Exp:** As per Article 243D of the Indian Constitution, inserted by the 73rd Constitutional Amendment Act:

- Not less than one third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) shall be reserved for women. So, statement 1 is correct
- Seats shall be reserved out of the total seats for the Scheduled Castes and the

Scheduled Tribes, in every Panchayat in proportion to their population. So, statement 2 is not correct

- Not less than one-third of the total number of seats reserved for SC/ST’s shall be reserved for women belonging, to the SC/ST’s. So, statement 3 is correct.
- Offices of the Chairpersons in the Panchayats at the village or any other level shall be reserved for the Scheduled Castes the Scheduled Tribes and women in such manner as the Legislature of a State may provide.
- The legislature of a State may make provision for reservation of seats in any Panchayat or offices of Chairpersons in the Panchayats at any level in favour of a backward class of citizens.
- Not less than one-third of the total number of offices of Chairpersons in the Panchayats at each level shall be reserved for women. So, statement 4 is correct

Therefore, the correct answer is (b).

**93. Ans. C**

**Exp:** The first distinct example of proper Mughal architecture inspired by Persian architecture, is the tomb of Humayun, in Delhi, built by his widow, Bega Begum. This tomb is important for a proper study of the development of later Mughal architecture. Although Sikander Lodi's tomb is the first garden-tomb built in India, it is Humayun's tomb which strikes a new note. So, statement 1 is not correct.

The tomb of Humayun was built by the orders of his first wife and chief consort, Empress Bega Begum (also known as Haji Begum). Construction began in 1565 and was completed in 1572; it cost 1.5 million rupees, paid entirely by the Empress. So, statement 2 is not correct.

Therefore, the correct answer is (c).

**94. Ans. C**

**Exp:** The criterion, as per the Citizenship Act, 1955, to acquire citizenship by birth in India is:

Any person born in India, on or after 26th January 1950 but prior to the commencement of the 1986 Act on 1st July 1987, is a citizen of India irrespective of the nationality of his parents. A person born in India on or after 1st July 1987 is considered as a citizen only if either of his parents was a citizen of India at the time of the birth.

Furthermore, those born in India on or after 3rd December 2004 are considered citizens of India only if:

- Both their parents are citizens of India. So, statement 1 is correct, and statement 3 is correct.
- If one parent is a citizen of India and the other not an illegal migrant at the time of their birth, so, statement 2 is correct.

While the children of foreign diplomats posted in India and enemy aliens cannot acquire Indian citizenship by birth. So, statement 4 is not correct.

The children of legal migrants are eligible for citizenship by birth

Therefore, the correct answer is (c).

**95. Ans. D**

**Exp:** A desert is a barren area of landscape where little precipitation occurs and consequently, living conditions are hostile to plant and animal life. In other words, it is an extremely dry area of land with sparse vegetation

- The following are the reasons for the presence of hot and tropical desert on the western part of the continents:

**Presence of tropical easterly.**

- Most of the world's deserts are located in the western margins of continents in the subtropics because the prevailing winds in the tropics are tropical easterly winds.

- When the moisture-laden trade wind flows from east to west shed their moisture on the eastern part and the tropical easterly winds become dry by the time they reach the western margins of the continents and so they bring no rainfall. Thus, the region becomes devoid of moisture which causes dry conditions leading to the formation of deserts.

**Anticyclonic conditions(zone of horse latitude):**

- The areas between 20 ° -30 ° latitude on western margins of continents are the regions of descending air. Because of this, the air gets compressed and warm as it descends and thus the moisture keeps decreasing

**Formation of Rain-shadow Zone:**

- A region in the lee of mountains that receives less rainfall than the region windward of the mountains is called a rain-shadow zone. For example Thar Desert in India is formed due to the formation of rainshadow zone because Aravallis mountains are situated parallel to the region. Therefore the moisture holding winds pass away from the region because there is an absence of mountain barriers.

**Presence of cold ocean currents**

- Presence of cold ocean currents along the western coast of continents tends to stabilize the air over the coast. This prevents cloud formation and rainfall. Hence, it leads to arid conditions or the formation of marine deserts on the adjacent coastal lands.
- Examples Sonoran Desert of North America, the Peru and Atacama deserts of South America, and the Sahara [Moroccan part] and Namib deserts of Africa).

**96. Ans. C**

**Exp:** Canary Current (Cold Current)

- Canary Current, also called Canaries Current, part of a clockwise-setting ocean-current system in the North Atlantic Ocean.
- It branches south from the North Atlantic Current and flows south-westward along the northwest coast of Africa as far south as Senegal before turning westward to eventually join the Atlantic North Equatorial Current.
- The cool temperature of the water is produced by upwelling caused by offshore winds from the continent. As the current flows around the Canary Islands, it helps to lessen the heating effect of the Sahara to the east. The thermal mixing creates excellent fishing grounds in the region.

**Falkland current (Cold Current)**

- The cold waters of the Antarctic Sea flows in the form of Falkland cold current from south to north along the eastern coast of South America up to Argentina.
- This current becomes most extensive and developed near 30°S latitude.
- This current also brings numerous icebergs from the Antarctic area to the South American coast.

**Kuroshio Current (Warm Current)**

- This is also known as Kuru Siwo or Japan Current. Most of it lies in the subtropical high-pressure belt and is under the influence of the westerlies. Since it carries the equatorial waters, it is a warm current.

**Oyashio Current (Cold Current)**

- Also known as Oya Siwo, Okhotsk or the Kurile current is a cold subarctic current flowing from the Bering Strait. It flows southwards in a counter-clockwise direction and joins the Kuroshio current off the Japanese island of Hokkaido.

**97. Ans. A**

**Exp:** Bajirao succeeded his father Peshwa Balaji Vishwanath in 1720 and was Peshwa till his death in 1740. He was responsible for the expansion of Maratha state from a kingdom in Deccan to an Empire across Western and Central India.

With the Maratha victory at Palkhed (March 1728), the Nizam was forced to recognise Shahu as the sole Maratha monarch with rights to chauth and sardeshmukhi of the Deccan. So, statement 1 is correct.

In 1738, he defeated a huge Mughal army under the generalship of Nizam and the treaty of Bhopal that followed in January 1739 ceded to the Peshwa the subah of Malwa and sovereignty over all lands between the rivers Narmada and Chambal.

In these territories, however, the Marathas did not try to overturn the local power structure and quickly entered into negotiations with the local zamindars for the payment of yearly tributes. A civilian system of revenue administration took time to emerge in this newly conquered region, and this was a feature typical of all Maratha conquests. So, statement 2 is not correct.

Therefore, the correct answer is (a).

**98. Ans. A**

**Exp:** At the Battle of Karnal in 1739, Nadir Shah led his army to victory over the Mughals. Muhammad Shah surrendered, and then both entered the capital Delhi together. The keys to the capital of Delhi were surrendered to Nadir Shah. So, statement 1 is correct.

Marathas under Bajirao had attacked Delhi in 1737 (a couple of years before the invasion by Nadir Shah), which had left Mughal empire weakened. They retreated back to central India after this attack and didn't come face to face with the Persians under Nadir Shah. So, statement 2 is not correct.

Therefore, the correct answer is (a).

**99. Ans. A**

**Exp:** Habeas Corpus is a Latin term which means 'to have the body of'. It is an order issued by the court to a person who has detained another person, to produce the body of the latter before it. The court then examines the cause and legality of the detention. It would set the detained person free if the detention is found to be illegal. Thus, this writ is a bulwark of individual liberty against arbitrary detention. So, statement 1 is correct.

The writ of habeas corpus can be issued against both public authorities as well as private individuals. So, statement 2 is not correct.

**It is not issued where the:**

- Detention is lawful.
- The proceeding is for contempt of a legislature or a court.
- Detention is by a competent court.
- Detention is outside the jurisdiction of the court. So, statement 3 is correct.

Therefore, the correct answer is (a).

**100. Ans. D**

**Exp:** The Ramoshi (alternately Berad) is an Indian community found largely in Maharashtra, Madhya Pradesh, and Karnataka, and are historically associated with great empires, important historical conflicts and agriculture. They are also described as the Bedar. So, statement a is not correct.

Weavers often belonged to communities that specialised in weaving. Their skills were passed on from one generation to the next. The tanti weavers of Bengal were one such community who were famous for their textiles. Similarly, the kaikollars were weavers from south India. So, statement b and c are not correct.

Some communities like the Agarias specialised in the craft of iron smelting. In the late nineteenth century, a series of famines devastated the dry tracts of India. In Central India, many of the Agaria iron smelters stopped work, deserted their villages and migrated, looking for some other work to survive the hard times.

A large number of them never worked their furnaces again. In April 1904, Charles Weld, an American geologist and Dorabji Tata, the eldest son of Jamsetji Tata, were travelling in Chhattisgarh in search of iron ore deposits.

Agarias helped in finding the hill whereon exploring the hill, the geologist declared that they had at last found what they had been looking for. Rajhara Hills had one of the finest ores in the world. So, statement d is correct.

Therefore, the correct answer is (d).