#### **HINTS & SOLUTION**

- 1. (a) Cow, camel, horse and lion were not depicted on seals. Unicorn (bull) was the animal most commonly represented on the seals.
- *(c)* Mahendra Varman- I (590- 630 CE)
   Gopala (750 CE)
  - King Bhoja- Pratihara( 836-885 CE)
  - Prantaka-1 Chola (907-953 CE)
- **3.** *(a)* Iqta is that part of land granted by the sultan to its military chiefs for maintenance of troopers. The land was taken back when the Iqtadars were not in a position to maintain the army.
- (b) Battle of Wandiwash in 1960 and French were finally defeated by English. Battle of Buxar (1764) -English under Munro defeated Mir Qasim, Shuja-ud-daula and Shah Alam II.
- (d) Butler Committee Relation between Indian states & paramount power Hurtog Committee - Growth of British India education-its effects Hunter Commission - Jallianwalabagh massacre Muddiman Committee - Working of

Diarchy as in Montague Chelmsford reforms

6. (b) Called by Viceroy Chelmsford to a War Conference in Delhi in April 1918,

Gandhi said in one-sentence speech that he supported recruitment for the war.

- 7. (c) The 16 Mahajanapadas were Magadha, Anga, Kashi, Kosala, Avanti, Vatsa, Gandhara, Kamboja, Chedi, Vajji, Malla, Kuru, Panchala, Matsya, Surasena, and Assaka. The Mahajanapadas were primarily located in the northern and eastern parts of India. This included the modern-day Bihar, Uttar Pradesh, Haryana, and Madhya Pradesh.
- 8. *(d)* The words Satyameva Jayate came from Mundaka Upanishad, meaning 'Truth Alone Triumphs'.
- **9.** (c) The Chishti order is a Sufi order within the mystic branches of Islam which was founded in Chisht, a small town near Herat, Afghanistan about 930 CE. The order was founded by Abu Ishaq Shami ("the Syrian"). The most famous of the Chishti saints is Moinuddin Chishti popularly known as Gharib Nawaz meaning "Benefactor of the Poor" who settled in Ajmer, India.
- **10.** (*c*) Because of the short supply of gold and silver he replaced gold coin with bronze.

- **11.** (b) John Shore planned Permanent Settlement and it was introduced in 1793 by Lord Cornwallis. Zamindars were made the owners of the land and the British got a fixed share of 10/11th of the revenue collected by the zamindars.
- **12.** (*b*) Statement 1 is incorrect as Lord Curzon was the first Governor General who established a regular police force in India on the British pattern.
- 13. (d) First Anglo-Maratha War : 1775-1782; Third Mysore War : 1790-1792 First Anglo - Burmese War : 1824-1826; Second Sikh War : 1848-1849.
- 14. (d) any province not willing to join the Union could have a separate constitution and form a separate union. Cripps Mission provides for an Indian Union with a dominion status after the second world war; which would be free to decide its relations with the Commonwealth and free to participate in the United Nations and other international bodies.
- **15.** (*a*) Such type of climate is witnessed in California (USA).
- **16.** (b) Statement 2 is incorrect because Comets are found beyond Neptune i.e. kupier belt.

- **17.** (*b*) Colombia, Kenya and Indonesia are countries through which the equator passes.
- 18. (b) According to the physiography of India the mountains ranges marked as 1, 2, 3 and 4 are Karakoram, Ladakh, Zanskar and Pir Panjal respectively. .
- 19. (a) Konkan Railway route connects Roha in Maharashtra with Mangalore Konkan Karnataka. Railway in established with partnership of three Maharashtra. states Goa and Karnataka. The state of Goa. Karnataka, Maharashtra and Kerala benefit most from Konkan railway.
- **20.** (*a*) The correct sequence of eastward flowing river of the peninsular India from north to south is Subarnarekha, Mahanadi, Godavari, Krishna, Pennar, Cauvery and Vagai.
- **21.** (*a*) Siltation is the process of deposition of silt on the river bed through rain water, by which the depth of the river reduces. The flood water crosses the river embankment, by which flood occurs in most part of north India.
- 22. (d) In the given map 'A' is Veraval port of Gujarat, 'B' is Karwar port of Karnataka, 'C' is Tuticorin port of Tamil Nadu and 'D' is Kakinada port of Andhra Pradesh.

- **23.** (*a*) Red Panda is found in mountains of Nepal, north-eastern India, China, Bhutan and Slow Loris lives in dense forest of north-east, dense forest of Assam.
- 24. (d) All the statements are correct.
- **25.** *(c)* The Cardamom Hills are southern hills of India and part of the southern Western Ghats located in southeast Kerala and southwest Tamil Nadu. They are not in coromandel coast. Kaimur Range is the eastern portion of the Vindhya Range extending from Madhya Pradesh to Bihar. They are not in Konkan coast. The Mahadeo Hills are in Madhya Pradesh, state of central India. Mikir hills are in Assam (North East India).
- 26. (b) The Changpa are a semi-nomadic Tibetan ethnic group found mainly in Zanskar region of J & K. They rear the Pashmina goats that yield a fine wool. They are kept in the category of Scheduled Tribes.
- 27. (b) Each degree of longitude represents a time difference of 4 minutes. Since Shillong is 9.5 degrees east of the IST meridian, the local time is 38 minutes ahead of IST. Therefore, at 10:00 AM IST, the local time in Shillong is 10:38 AM.
- **28.** (c) The alpine vegetation in eastern himalayas is found upto 4000 meters

because in eastern himalayas the monsoon rainfall is higher than western Himalayas.

- **29.** (*d*) Tropical moist deciduous forest covers arounds 37% of the total cover in India which is the largest occupied area among 16 different forest types of the country. These forests are found in the north-eastern states along the foothills of Himalayas, eastern slopes of the Western Ghats and Odisha.
- **30.** (*b*) Slate Metamorphous Rock Lignite - Sedimentary rock Bauxite – Non-ferrous mineral Granite - Igneous rock.
- **31.** (c) A meridian is an imaginary line joining the north and south poles at right angles to the equator, designated by degrees of longitude from 0° at Greenwich to 180°. The position of a point along the meridian is given by its latitude. Each meridian is perpendicular to all circles of latitude.
- **32.** (*c*) High spring tides occur at new moon and full moon because the Sun, Earth and Moon are in straight line.
- **33.** (a) If a fluid flows such that its velocity at a point is always the same in magnitude and direction, the fluid is said to have a streamline flow. The type of flow in a fluid system is characterized by the presence of laminae, or parallel streams of fluid.

- **34.** (d) The temperature dependence of liquid viscosity is the phenomenon by which liquid viscosity tends to decrease (or, alternatively, its fluidity tends to increase) as its temperature increases. Thus, with increase of temperature viscosity of glycerine decrease.
- 35. (a) Optical fiber operates on the principle of total internal reflection. This phenomenon occurs when light traveling through a medium with a higher refractive index (the core of the optical fiber) hits the boundary of a medium with a lower refractive index (the cladding) at an angle greater than the critical angle. When this happens, all the light is reflected back into the core rather than passing into the cladding. This allows the light to be transmitted over long distances with minimal loss, making optical fibers highly effective for telecommunications and data transmission.
- **36.** (*c*) Transformers are indeed useful for stepping up or stepping down voltages, but they are used in A.C. (alternating current) circuits, not D.C. (direct current) circuits.
- **37.** (b) This is caused due to the interference caused by the electromagnetic waves generated by a passing vehicle. These waves were within the same frequency range as that of the waves of TV reception and

hence caused Interference. Interference is a phenomenon in which two waves superimpose to form a resultant wave of greater or lower amplitude.

- **38.** (b) If v is the final velocity, then according to the principle of conservation of momentum'  $m_1v_1 + m_2v_2 = (m_1 + m_2)v$ Therefore,  $v = m_1v_1 + m_2v_2 / (m_1+m_2)$ Using values from the eqn, v = m x a + 0 / (m + M)= ma / (m + M)
- **39.** (d) Cathode ray is a beam of electrons emitted from the cathode of a vacuum tube. It is invisible. Cathode ray tubes are also found in televisions and computer monitors. Since cathode ray is a beam of electrons and all electrons are identical, charge to mass ratio is same for all the gases and does not depend on the nature of gas.
- **40.** (*d*) The Sun appears red at sunrise and sunset because of the scattering of light in the Earth's atmosphere. During these times, the Sun is low on the horizon, and its light must pass through a greater thickness of the Earth's atmosphere compared to when it is overhead.

The Earth's atmosphere scatters shorter wavelengths of light (such as blue and violet) more effectively than longer wavelengths (such as red and orange). As a result, the shorter wavelengths are scattered out of the direct path of the sunlight, leaving the longer wavelengths, primarily red and orange, to reach the observer's eyes..

- 41. (d) Since R is directly proportional to length of the wire, when wire is cut into equal parts, then Resistance of each part = R/nWhen the wires are connected in parallel, then the equivalent resistance of combination is  $1/R_2 = n/R + n/R + n/R....n$  times Or,  $1/R_2 = n^2R$ Or,  $R_2 = R/n^2$
- **42.** (*d*) The fuse in an electric circuit is connected in series with the live wire to protect the circuit. This ensures that if there is an overload or short circuit, the fuse will blow and break the circuit, cutting off the current flow. This prevents damage to the electrical components and reduces the risk of fire or electric shock by disconnecting the live voltage from the rest of the circuit.
- **43.** (*a*) From the economic point of view equilibrium in the marginal utility derived from the goods consumed and money paid. The consumers would be in equilibrium if the satisfaction derived from each commodity is equal to each other.
- **44.** *(a)* Devaluation is a conscious decision taken by Central Bank of the country to lower the external value of domestic currency. After devaluation of the

rupee Indian goods would become cheaper for foreigners.

- 45. (a) Fiscal deficit = Revenue receipts + non-debt creating capital receipts Total expenditure; Budget deficit = Total receipts Total expenditure.
- **46.** (*a*) Boom is a period of time during which sales of a product or business activity increases very rapidly. In the stock market, booms are associated with bull markets, whereas busts are associated with bear markets.

Recession is a significant decline in activity across the economy, lasting longer than a few months. It is visible in industrial production, employment, real income and wholesale-retail trade. Depression is a severe and prolonged downturn in economic activity. In economics, a depression is commonly defined as an extreme recession that lasts two or more years.

Recovery is a period of increasing business activity signalling the end of a recession. Much like a recession, an economic recovery is not always easy to recognize until at least several months after it has begun.

**47.** *(c)* National income is a measure of the total economic output of a country. It can be represented as: Gross National Product (GNP) at market prices minus depreciation (to account for the wear and tear on capital assets) minus indirect taxes (since they

are not part of producers' income) plus

subsidies (which are government payments that add to producers' income).

- **48.** (c) Increase in SENSEX reflects the overall mood of the economy. A rise in it means that investors and FIIs are positive about the growth of Indian economy and expect that it will be sustained in future. But a rise in SENSEX doesn't necessarily mean that the price of your stocks also moves up. It only changes in share prices due to short run factors. It does not reflect the actual economic conditions.
- **49.** (b) Service tax is a type of indirect tax that is levied by the Central Government. Unlike direct taxes, which are paid directly by individuals or organizations to the government (such as income tax), indirect taxes are collected by intermediaries (like service providers) from the consumers and then paid to the government.
- **50.** (*a*) As per provisions given under Article 281 of the Indian Constitution the recommendations of the finance commission go to the president who is constitutionally bound to place it before the two houses of the parliament.
- **51.** *(c)* Recession is slow down in effective demand for goods and services slow down in the economy implies a short run decline in the growth rate.

- **52.** (b) The correct sequence is Uttar Pradesh – Maharashtra – Tamil Nadu – Andhra Pradesh.
- **53.** (*b*) According to Article 67, a Vice-President may be removed from his office by a resolution of the Council of States passed by a majority of all the then members of the Council and agreed to by the House of the People.
- **54.** (*d*) A is false because the constitution without specifying the strength of the Commission has left the matter to. The discretion of the president, who determines its composition. According to article 315, the UPSC consists of a chairman and other members appointed by the president of India. Articles 315 to 323 of Part XIV of the constitution provide for a Public Service Commission for the Union and for each state.
- **55.** (c) PM has complete discretion to choose his ministers in the Cabinet not necessarily from the two Houses of Parliament but can also choose any other person. That person should become member of either house within 6 months from the date he enters the office.
- **56.** (c) 7th Amendment Act 1956 provides for composition of the House of the People and readjustment after every census. 31st amendment act 1973 provides for raising the upper limit for the representation of states in the Lok

Sabha from 500 to 525 and reducing the upper limit for the representation of UTs from 25 to 20.

- **57.** (*d*) Assertion is wrong as reservation for women in Parliament and state legislature would require a constitutional amendment.
- **58.** (*d*) A defeated candidate who fails to secure more than one sixth of the valid votes polled in the constituency will lose his security deposit. When a very large number of candidates contest the election, due to distribution of votes, the winning candidate may get less than  $1/6^{\text{th}}$  of valid voters.
- **59.** (c) the correct order of precedence is Chief Justice of India, Union Cabinet Minister, Chief Election Commissioner and Cabinet Secretary.
- **60.** (b) Schedule X was added by 52nd amendment in 1985. It contains provisions of disqualification on the grounds of defection.

Schedule VIII contains list of 22 languages of India recognized by Constitution.

Schedule I deals with the List of States & Union Territories

Schedule IX Contains acts & orders related to land tenure, land tax, railways, and industries.

**61.** (*c*) Madhya Pradesh publishes largest number of newspapers.

- 62. (b) A registered voter in India can contest an election to Lok Sabha from any constituency in India except autonomous Districts of Assam. Lakshadweep and Sikkim. According to Section 8 of Representation of Peoples Act 1951, a person convicted of any offence and sentenced to imprisonment for not less than two years [other than any offence referred to in sub-section (a) or sub-section (b)] shall be disgualified from the date of such conviction and shall continue to be disqualified for a further period of six years since his release.
- **63.** (c) The constitution of 1950 distinguished between three main types of states:

The Part A states were ruled by an elected governor and state legislature.

The Part B states were governed by a rajpramukh.

The Part C states were governed by a chief commissioner appointed by the President of India.

The Part D states were administered by a lieutenant governor appointed by the central government.

64. (a) Statement 1 is incorrect. The election of the Speaker of the Lok Sabha is usually fixed by the President of India, not the Prime Minister. Statement 2 is correct. The Speaker of the Lok Sabha fixes the date for the election of the Deputy Speaker, and the Secretary General notifies the

members.

Statement 3 is correct. Members can give notice in writing of a motion that another member be chosen as the Deputy Speaker before noon on the day preceding the election date.

- **65.** (*d*) The Finance Commission is constituted by the President under article 280 of the Constitution, mainly to give its recommendations on distribution of tax revenues between the Union and the States and amongst the States themselves.
- **66.** *(d)* There are 21 High Courts in India. Six (Bombay, Calcutta, Guwahati, Kerala, Madras and Punjab and Haryana High Court) of them have jurisdiction over more than one state. National Capital Territory of Delhi has High Court of its own.
- **67.** *(c)* Minority education institution has the power to reserve only up to 50% seats for students belonging to its own community.
- **68.** (*c*) In recognizing a parliamentary party or group, the speaker shall take into consideration the following principles:

An association of members who propose to form a parliamentary party: 1. Shall have an association of members who have a distinct programme of parliamentary work

2. Shall have an organization both inside and outside the house

3. Shall have at least a strength equal to the quorum fixed to constitute a sitting of the house i.e. one tenth of the total number of members of the house.

- **69.** (*d*) Only the fundamental rights guaranteed by the constitution can be enforced under Article-32 and not any other rights.
- **70.** (c) Voter Verifiable Paper Audit Trail (VVPAT) is a method of providing feedback to voters using a ballot less voting system.
- 71. (a) Svalbard, discovered in 1596 by Willem Barentsz, is an Arctic archipelago under Norwegian sovereignty. It lies between the North Pole and Norway, covering 61,022 sq.km with a majority glaciated.
- 72. (b) The project will cater to the energy requirements of five states namely Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal.The project is being implemented by GAIL.
- 73. (b) India and Pakistan became full members of the SCO in 2017, not 2015.The official working languages of the SCO are Chinese and Russian, but not
- **74.** (d) Lieutenant General NS Raja Subramani assumed the charge as the Vice Chief of Army Staff on 1 July

English.

2024. He replaced former Vice Chief of Army Staff Lieutenant General Upendra Dwivedi, who took charge as the 30th Chief of Army Staff.

- **75.** (*a*) The Great Barrier Reef is the world's largest coral reef system, which is located off the east coast of the Queensland mainland, Australia.
- **76.** (b) The Union Government announced the observation of August 23rd every year as the National Space Day to commemorate the success of the Chandrayaan 3 mission.
- 77. (a) World day against child labour is observed on  $12^{\text{th}}$  June.
- **78.** (c) Rohit has become the first-ever batter to record 200 sixes in T20I cricket. Only one other batter has more than 150 maximums in the format. New Zealand's Martin Guptill follows Rohit with 173 T20I sixes.
- **79.** *(c)* The SAARC Secretariat is based in Kathmandu, Nepal. The Secretariat is headed by the Secretary General, who is appointed by the Council of Ministers from Member States in alphabetical order for a three year term. The Secretary General is assisted by eight Directors on deputation from the Member States. The South Asian Association for Regional Cooperation (SAARC) is an economic and geopolitical organisation of eight countries that are primarily located in

South Asia or the Indian subcontinent. The first summit was held in Dhaka on 8 December 1985 when the organisation was established by the governments of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

- **80.** (b) It consists of France, Germany, Italy, United Kingdom, Japan, United States and Canada..
- **81.** (b) The 2028 Summer Olympics, officially known as the Games of the XXXIV Olympiad, and commonly known as Los Angeles 2028 or LA28, is an upcoming international multisport event scheduled to take place from July 14–30, 2028, in and around Los Angeles, California, United States.
- 82. (d) BRICS summit in Russia in October 2024 is set to undergo a significant transformation as it expands its membership to include five new nations Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates.
- **83.** (c) Chlorofluoro carbon  $(CF_2Cl_2)$  is also known as freon. It is used as refrigerants in refrigerators and air conditions. It is also used as propellant in aerosols and foams.
- **84.** *(a)* Reverse osmosis method is used to obtain pure water from water containing a salt or for desalination of sea water.

- **85.** *(c)* Nitric acid is used in the production of fertilizers. The principal chemical produced form nitric acids ammonium nitrate, sulphuric acid is used in the production of explosives like TNT, nitroglycerine, gun cotton, etc.
- **86.** (*c*) Barium is given in adequate amount to patients before X-ray examination. The gut (gastrointestinal tract) does not show up very well on ordinary X-ray pictures. However, if you drink a white liquid that contains a chemical called barium sulphate, the outline of the upper parts of the gut (oesophagus, stomach and small intestines) shows up clearly on X- ray pictures. This is because X-rays do not pass through barium.
- **87.** (*d*) Blue vitriol is blue, crystalline hydrous solution of copper sulphate, CuSO4·5H2O, one of the most important industrial copper salts, used in insecticides, germicides, and hair dyes and in the processing of leather and textiles.

Magnesium sulphate is a chemical compound containing magnesium, sulphur and oxygen, with the formula MgSO4. It is often encountered as the heptahydrate epsomite (MgSO4·7H2O), commonly called "Epsom salt".

Sodium bicarbonate or sodium hydrogen carbonate is the chemical compound with the formula NaHCO3. The salt has many related names such as baking soda, bread soda, cooking soda, bicarbonate of soda.

Caustic soda or sodium hydroxide is an essential ingredient in an array of industrial applications. In addition, consumers use caustic soda when using cleaners, such as oven and drain cleaners.

- **88.** (a) Synthetic detergents are sodium salt of long chain sulphonic acid or alkyl hydrogen sulphate. Hardness in water is due to presence of chlorides, sulphates and nitrates salts of calcium and magnesium. Now detergents are capable of forming soluble salts even with the calcium and magnesium ions present in hard water and forms lather easily in hard water.
- 89. (a) To determine the correct sequence of hydrocarbons in increasing order of molecular weights, we look at the number of carbon atoms and their corresponding molecular formulas: Methane (CH4): Molecular weight = 12 (carbon) + 4 (hydrogen) = 16 g/mol Ethane (C<sub>2</sub>H<sub>6</sub>): Molecular weight = 2 × 12 (carbon) + 6 (hydrogen) = 30 g/mol Propane (C<sub>3</sub>H<sub>8</sub>): Molecular weight = 3 × 12 (carbon) + 8 (hydrogen) = 44 g/mol

Butane (C<sub>4</sub>H<sub>10</sub>): Molecular weight =  $4 \times 12$  (carbon) + 10 (hydrogen) = 58 g/mol

Thus, the hydrocarbons in increasing order of molecular weights are:

Methane (16 g/mol)

Ethane (30 g/mol) Propane (44 g/mol) Butane (58 g/mol)

So, the correct sequence is: Methane, ethane, propane, and butane.

- **90.** (b) During the photochemical smog NO and O3 both are produced but major production is of nitrogen oxide (NO) and NO2.
- **91.** (d) The carbon credit system was indeed ratified in conjunction with the Kyoto Protocol, which was an international treaty aimed at reducing greenhouse gas emissions. Carbon credits are awarded to countries or groups that have reduced their greenhouse gases below their emission quotas, providing an incentive to lower emissions.
- **92.** (c) Nuclear fusion is the process of making a single heavy nucleus (part of an atom) from two lighter nuclei. The difference in mass between the products and reactants is manifested as the release of large amounts of energy. Fusion is the process that powers active or "main sequence" stars, or other high magnitude stars.
- **93.** (c) Soaps are made of materials found in nature. Detergents are synthetic. a big drawback of washing with soap is that the minerals in water react with those in soap, leaving an insoluble film. Detergents react less to minerals

in water and for all practical purposes are the product of choice for laundry, unless you have very soft water. On the other hand, soap will combine with the magnesium and calcium ions in hard water to create an insoluble residue that can clog drains and stick to clothing..

- **94.** (b) When copper is exposed to air, it reacts with moist carbon dioxide in the air and slowly loses its shiny brown surface and gains a green coat. This green substance is basic copper carbonate (CuCO3. Cu (OH)2). The formation of this green coating on the surface of a copper object corrodes it.
- **95.** (*a*) Living organism require about 27 elements of which 15 are metals. K, Mg, Na and Ca are required in major quantities. Minor quantity of Mn, Fe, Co, Cu, Zn and Mo and trace amount of V, Cr, Sn, Ni and Al are required by some organisms.

Calcium, magnesium and phosphorus are essential parts of the bones and teeth.

Calcium is necessary for blood clotting.

Sodium helps in muscle activity and transmission of nerve.

- **96.** (*d*) DNA found in mitochondria other than nucleus. The DNA is called mitochondrial DNA.
- **97.** (b) Person having blood group 'AB' is called universal recipient because the

'AB' blood group has no antibody in the blood plasma. So, the person can accept any type of blood group (i.e. A, B and O).

- **98.** (b) Vitamin A group includes retinol. Their parent carotene is a vitamin substance as b- carotene. Pepsin is an enzyme produced in stomach, which digest protein. Progesterone is an hormone, produced in human ovary. Keratin is a protein. The main component of hair and nail is keratin.
- **99.** (*a*) The complete conversion of glucose in presence of oxygen, into carbon dioxide, water and release energy is called aerobic respiration. Anaerobic respiration, occurs in the absence of oxygen.
- 100. (b) Vaccines containing antigens introduced into the body. are stimulating the immune system response by instructing B cells, with assistance from T cells, to produce antibodies. Antibodies are produced to fight the weakened or dead viruses in the vaccine. The immune system prepares to destroy real and stronger viruses in the future. When new antigens enter the body, white blood cells called macrophages engulf them; process the information contained in the antigens, and send it to the T cells so that an immune system response can be mobilized.

- **101.** (a) The main constituent of alcohol is Ethanol and the concentration of ethanol in a sample can be determined by back titration with acidified potassium dichromate.
- 102. (c) The typical fasting blood sugar level for a healthy person is usually between 70 to 100 mg/dl. After meals, it can rise, but generally stays below 140 mg/dl. Therefore, the closest option to a normal fasting blood sugar level is 80 90 mg/dl.
- **103.** *(d)* Assertion is false. In human, sex determination of offspring depends on male because male sperm contains XY chromosome, whereas female has XX chromosome in their ovum.
- **104.** (a) The largest bone in human body is femur. Cholera is caused by a bacteria Vibrio cholerae, Athlete's foot disease is caused by parasific fungus of genus Trichophyton..
- 105. (d)Aquaculture: farming of organisms aquatic such as fish. crustaceans, molluscs and aquatic plants; Floriculture: cultivation of flowering and ornamental plants for gardens and for floristry: Sericulture: rearing of silkworms for the production of raw silk; and Viticulture: production and study of grapes.
- **106.** *(b)* Calciferol (Vitamin D); Tocopherols and tocotrienols (Vitamin E); Phylloquinone, menaquinones

(Vitamin K); and Retinol, retinal, and four carotenoids including beta carotene (Vitamin A) are all fat soluble vitamins.

- **107.** *(a)* These features can also be found in some non-mammals, whereas mammary glands, sweat glands, and a diaphragm are unique to mammals.
- **108.** (b) It is the mark that is attached on a product which is available in our daily lives as well as certified as contributing to environmental preservation in terms of less environmental burden..
- 109. (a) The EU is the world's largest economy. The flag of Europe is used to represent both the European Union and the Council of Europe. The European anthem is based on the prelude to "The Ode to Joy". It was adopted by European Community leaders in 1985. Beginning in the year 1999 with some EU member states, now 19 out of 28 EU states use the euro as official currency in a currency union. Its combined armed forces are the second largest in the world..
- **110.** (b) J&K Rifles and Indian Coast Guard are part of ministry of defence whereas, Assam Rifles is a paramilitary force under Home Ministry.
- **111.** *(d)* Master Chief Petty Officer is a rank in the Indian Navy.

- **112.** (c) The author of the book "Waiting for the Mahatma" is R. K. Narayan.
- 113. (c) Ghoomar Rajasthan;
  Yakshaganga Karnataka; Lavani Maharashtra; Raut Nach Chhattisgarh.
- 114. (b) The fair held at the famous Kamakhya Temple in Assam is the Ambubachi Mela in Assamese month 'Ahaar'.
- **115.** (a) Agasthyamalai Biosphere Reserve is located in the states of Tamil Nadu and Kerala.
- **116.** *(d)* The 2028 Games will feature the debut of flag football, cricket and squash as optional sports, joined by the return of baseball/softball and lacrosse.
- 117. (c) National Institute of Unani Medicine - Bengaluru National Institute of Homeopathy-Kolkata National Institute of Ayurveda - Jaipur National Institute of Siddha- Chennai.
- **118.** *(d)* Farkhor Air Base, operated by the Indian Air Force, is situated in Tajikistan.
- **119.** *(d)* NATO (North Atlantic Treaty Organization) has 31 member states as of 2024, not 28.

120. (c) The first UN armed force was established to create a buffer between Israeli and Egyptian forces in the Sinai. The first all women contingent in peacekeeping mission, a formed Police Unit from India, was deployed in 2007

to the UN Operation in Liberia. Major Radhika Sen of India was honoured with the prestigious 2023 United Nations Military Gender Advocate of the Year Award.