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Test Booklet Series

C

TEST BOOKLET

GENERAL STUDIES (P) 2026 – Test – 6313

Time Allowed: Two Hours **Maximum Marks: 200**

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BBOOKLET DOES **NOT** HAVE ANY UNPRINTED OR TURN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.

2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D** AS THE CASE MAY BE IN THE APPROPRIATE PLACE IN THE ANSWER SHEET.

3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. **Do NOT** write anything else on the Test Booklet.

4. This Test Booklet contains **100** items (Questions). Each item is printed in **English.** Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response with you consider the best. In any case, choose **ONLY ONE** response for each item.

5. You have to mark all your responses ONLY on the separate Answer Sheet provided. See direction in the answers sheet.

6. All items carry equal marks. Attempt all items. Your total marks will depend only on the number of **correct responses** marked by you in the answer sheet. For **every incorrect** response **1/3rd of the allotted marks** will be deducted.

7. Before you proceed to mark in the Answer sheet the response to various items in the Test booklet, you have to fill in some particulars in the answer sheets as per instruction sent to you with your Admission Certificate.

8. After you have completed filling in all responses on the answer sheet and the examination has concluded, you should hand over to Invigilator only the answer sheet. You are permitted to take away with you the Test Booklet.

9. Sheet for rough work are appended in the Test Booklet at the end.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

1. Consider the following statements regarding transcontinental railways and the cities they connect:

1. The Trans-Siberian Railway connects Moscow and Beijing.
2. The Trans-Canadian Railway runs from Vancouver to Halifax.
3. The Union and Pacific Railway connects New York City and San Francisco.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

2. Consider the following statements with reference to the irrigation systems in India:

1. Major projects have both surface and groundwater as their source.
2. Drip irrigation, spray or micro-sprinkler irrigation and bubbler irrigation belong to the furrow irrigation category of irrigation methods.

Which of the statements given above is/are correct?

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

3. A recent study shows that Olive Ridley numbers are growing, but rising sand temperatures are skewing gender ratios. In this context, consider the following statements regarding the Olive Ridley Turtles:

1. They are found only in the tropical regions of the Indian Ocean.
2. They are omnivorous, meaning it feeds on a wide variety of food items.
3. The species is classified as Critically Endangered under the IUCN Red List.

How many of the statements given above are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

4. What is "Gyan Bharatam Mission" which was recently seen in the news?

(a) It is a national initiative aimed at enhancing digital literacy and AI-driven education across India.
(b) It is a collaborative effort to document and preserve India's ancient knowledge systems and traditional wisdom.
(c) It is a UNESCO-backed program promoting cultural and academic exchange between India and other nations.
(d) It is a government-led scheme to integrate skill-based learning with mainstream education for holistic development.

5. The term 'Opioid', sometimes seen in the news, is related to a

(a) class of drugs used to treat viral infections.

(b) class of drugs used to treat pain and related disorders.

(c) technique used in agriculture to increase crop yield.

(d) new renewable energy source derived from plant-based materials.

6. Consider the following industries:

1. Aluminium Smelting Industry
2. Paper Manufacturing Industry
3. Tea Processing Industry
4. Textile Garment Industry

How many of the above can be considered as weight-losing raw materials-based industries:?

(a) Only two

(b) Only three

(c) All four

(d) None

7. Consider the following statements:

1. Bauxite is a ferrous metallic mineral used in the manufacturing of aluminum.
2. It is found extensively in the Terai region of the Northern Plains.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

8. With reference to rural settlements, consider the following statements:

1. The layout and structure of rural houses are largely influenced by climatic conditions and locally available materials.
2. The occupation of the population in rural settlements is predominantly based on secondary and tertiary sector activities.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

9. Consider the following pairs:

Settlement Pattern		**Characteristic Description**
Linear Pattern	:	Houses are arranged around a central feature like a lake or temple.
Circular Pattern	:	Develops along roads, rivers, or railway lines.
Rectangular Pattern	:	Roads intersect at right angles, forming a grid-like layout.

How many pairs given above are correctly matched?

(a) Only one pair

(b) Only two pairs

(c) All three pairs

(d) None

10. Which of the following statements correctly explains the term 'physiological density'?

(a) It is a measurement of total population per unit area of a country.

(b) It refers to the ratio to total agricultural population and the total area of a country.

(c) It refers to the ratio of the total population and the net cultivable area in a country.

(d) It refers to the ratio of the total agricultural population and the net cultivable area in a country.

11. With reference to population growth, consider the following statements:

1. Crude Birth Rate (CBR) is measured as the number of births per 10,000 people in a given year.
2. Natural Growth of Population is determined by the difference between birth rate and death rate, excluding the impact of migration.
3. Total Population Growth accounts for both natural growth and net migration.

How many of the above statements are correct?

(a) Only one

(b) Only two

(c) All three

(d) None

12. With reference to the steel sector, consider the following statements:

1. India is the largest producer of crude steel.
2. Steel Authority of India Limited (SAIL) is the largest steel-making company in India.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

13. Consider the following statements regarding the Railway sector in India:

1. The Indian Railways network is the fourth longest network in the world.
2. More than ninety percent of Railway lines in India are based on Narrow gauge.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

14. Which of the following activities are associated with Red-collar workers?

(a) Primary activities

(b) Secondary activities

(c) Quaternary activities

(d) Quinary activities

15. Consider the following countries:

1. Japan
2. Germany
3. Italy
4. Nigeria

How many of the above countries have an Age-Sex Pyramid with a narrow base, indicating low birth rates and an aging population?

(a) Only one
(b) Only two
(c) Only three
(d) All four

16. Which of the following statement is ***not*** correct with respect to the features of extensive commercial grain cultivation?

(a) It is practised in the interior parts of semi-arid lands of the midlatitudes.
(b) Wheat is the principal crop, though other crops like corn, barley, oats and rye are also grown.
(c) Size of the farm is very large, therefore entire operations of cultivation from ploughing to harvesting are mechanised.
(d) There is a high yield per acre with a high yield per person.

17. Consider the following statements regarding the Soliga Tribe:

1. The Soliga Tribe is a nomadic tribe predominantly found in the forests of Kerala.
2. They are classified as a Particularly Vulnerable Tribal Group (PVTG) by the Government of India.
3. They are known as the "Children of Bamboo" in the local language.

How many of the statements given above are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

18. Consider the following statements:

Statement-I: Female migrants dominate the rural-to rural Intrastate migration.

Statement-II: Work and employment are the main causes for the female migration.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct but Statement-II is incorrect
(d) Statement-I is incorrect but Statement-II is correct

19. Which among the following best describe the "Capability approach" to human development?

(a) Higher government expenditure on services like health and education.
(b) Provision of basic needs of defined sections of society ignoring their choices.
(c) Building human capabilities in the areas of health, education and access to resources is the key to increasing human development.
(d) Higher the level of income, the higher is the level of human development.

20. Consider the following pairs:

Agriculture practice		***Country***
1. Milpa	:	Central America
2. Ladang	:	Malaysia
3. Taungya	:	Sri Lanka

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

21. Consider the following pairs:

Mining regions		***Associated minerals***
1. Chuquicamata	:	Copper
2. Kalgoorlie	:	Gold
3. Utah	:	Diamond

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

22. Consider the following activities:

1. Scientific research in biotechnology
2. Food processing
3. Decision-making in government policy
4. Teaching at a university

Which of the above are considered Quinary activities?

(a) 1, 2 and 3 only
(b) 1, 3 and 4 only
(c) 2, 3 and 4 only
(d) 1, 2, 3 and 4

23. Consider the following statements with respect, Child sex ratio:

1. Child sex ratio in Census 2011 has improved when compared to Census 2001 data.
2. Child sex ratio in Haryana and Punjab is more than the national average.

Which of the statements given above is/are correct?

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

24. The term 'Indirect Prompt Injection' is sometimes mentioned in news in the context of which one of the following?

(a) A cybersecurity vulnerability where external data manipulates AI-generated responses.
(b) A genetic engineering technique to enhance crop resilience against pests.
(c) A quantum computing method used for optimizing machine learning algorithms.
(d) A technique in pharmacology for delivering targeted drug therapy using AI-assisted modelling.

25. Environmental activists raised concerns over the rapidly declining water levels in the Caspian Sea. Which of the following countries has a border with the Caspian Sea?

1. Kazakhstan
2. Iraq
3. Azerbaijan
4. Iran
5. Afghanistan

Select the correct answer using the code given below.

(a) 1, 2 and 3 only
(b) 2, 3, 4 and 5 only
(c) 3, 4 and 5 only
(d) 1, 3 and 4 only

26. Recently, the Supreme Court of India, issued directions regarding the power of the government to remit the sentence of convicts. In this context, consider the following statements regarding remission in the Indian Constitution:

1. Under the constitution, both the president and the governor have the power of remission.
2. State government can also suspend or remit a sentence with or without conditions.

Which of the statements given above is/are correct?

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

27. Which of the following parameters is/are taken into account while calculating the Human Poverty Index?

1. Household income
2. Adult illiteracy rate
3. Number of small children who are underweight

Select the correct answer using the code given below.

(a) 1, 2 and 3
(b) 2 only
(c) 2 and 3 only
(d) 1 and 3 only

28. Land Restoration for International Peace and Security is a report published by

(a) Food and Agriculture Organization
(b) Global Partnership on Forest and Landscape Restoration
(c) World Resources Institute
(d) United Nations Convention to Combat Desertification

29. Consider the following pairs:

Major Oil field		***Country***
1. Burgan	**:**	Kuwait
2. Safaniya	**:**	Iran
3. Lula	**:**	Venezuela
4. Sugar Loaf		Brazil

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) Only three
(d) All four

30. They are a nomadic tribe originally known for wandering in the central highlands of East Africa but are now largely confined to designated reserves in Kenya and Tanzania. Their society revolves around cattle rearing, particularly Zebu cattle, which have distinctive humps and long horns. Every family owns cattle, and they rely on both milk and blood from their animals for sustenance, though they do not traditionally slaughter them for meat.

Which of the following tribes is being described in the passage above?

(a) Berbers
(b) Masai
(c) Bedouins
(d) Bushmen

31. In the context of human settlements, Semi-clustered patterns are commonly found in

(a) Gujarat plain and some parts of Rajasthan.
(b) hilly regions of northeastern states
(c) coastal areas of Kerala
(d) lower valleys of the Himalayas

32. Which of the following is/are the features of the Solar Coronal Holes?

1. High-dense regions
2. A magnetic field is open.
3. Bipolar magnetic fields.

Select the correct answer using the code given below.

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 2 only

33. Consider the following statements with reference to 'Manganese' in India:

1. It is an important raw material for manufacturing Ferroalloys.
2. Maharashtra produces the most manganese in the country.

Which of the statements given above is/are correct?

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

34. Consider the following:

1. Maharashtra
2. Tamil Nadu
3. Karnataka
4. Goa

How many states are part of the Konkan Railways network?

(a) Only one
(b) Only two
(c) Only three
(d) All four

35. With which of the following countries India has signed the Comprehensive Economic Partnership Agreement?

1. South Korea
2. Japan.
3. Australia
4. UAE

Select the correct answer using the code given below.

(a) 1 and 2 only
(b) 2 and 4 only
(c) 1, 2 and 4 only
(d) 1, 2, 3 and 4

36. With reference to Sugar Industry, consider the following statements:

1. In recent years, there is a tendency for the sugar mills to shift and concentrate in the southern and western states.
2. The cooperatives of southern and western states are more successful in these states.

Which of the statements given above is/are correct?

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

37. Consider the following statements with regard to the cultivation of rice:

1. Clayey black soil in which water can remain standing is ideal for rice.
2. It requires low temperature and high humidity with annual rainfall above 100 cm.
3. About one-fourth of the total cropped area in the country is under rice cultivation.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 3 only
(d) 1 and 3 only

38. Consider the following statements with reference to Dryland farming in India:

1. It is largely confined to regions having an annual rainfall of less than 75 cm.
2. These regions grow hardy and drought-resistant crops such as ragi, bajra, moong, gram and guar.

Which of the statements given above is/are correct?

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

39. Arrange the following Iron ore mines in India from West to East:

1. Mayurbhanj
2. Durg
3. Gua
4. Ratnagiri

Select the correct answer using the code given below

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

40. Consider the following statements:

1. Truck farming refers to the large-scale cultivation of vegetables for supply to distant markets.
2. Factory farming involves intensive rearing of livestock like poultry and cattle in controlled conditions with manufactured feed and veterinary care.

Which of the statements given above is/are correct?

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

41. The "Imagine a World with more women in Science'' campaign is an initiative of

(a) UN Women
(b) UNESCO
(c) World Economic Forum
(d) Global Fund for Women

42. Consider the following statements regarding fossil fuel reserves:

1. Crude petroleum generally occurs in sedimentary rocks, especially those of the Tertiary period.
2. Shale gas extraction requires hydraulic fracturing, which uses a significant amount of water.
3. The majority of the world's proven oil reserves are found in North America.

Which of the statements given above are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

43. The term 'PARAS-2', sometimes seen in the news, is a/an:

(a) high-resolution spectrograph developed by the Physical Research Laboratory for detecting exoplanets.
(b) indigenous satellite navigation system developed by ISRO.
(c) new supercomputer installed at the Indian Institute of Science for climate modelling.
(d) deep-sea exploration vehicle designed by the National Institute of Ocean Technology.

44. Consider the following statements with regard to the shapes of the settlements:

1. Rectangular patterns of rural settlements are found in plain areas or wide intermontane valleys.
2. Cruciform settlements develop on the cross-roads and houses extend in all the four directions.

Which of the statements given above are correct?

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

45. The term 'General Anti-Avoidance Rules (GAAR)', sometimes seen in the news, is related to a:

(a) set of regulations governing international trade agreements
(b) cybersecurity initiative to prevent online fraud
(c) framework to curb tax evasion and aggressive tax planning
(d) protocol for ethical data collection and privacy protection

46. Consider the following factors influencing human migration:

1. Economic opportunities
2. Political instability
3. Natural calamities
4. Harsh climatic conditions
5. Better healthcare facilities

How many of the above can be classified as push factors for migration?

(a) Only two
(b) Only three
(c) Only four
(d) All five

47. Which of the following factors contribute to the formation of an urban agglomeration?

1. High population density in urban centers.
2. Improved transportation networks connecting nearby towns.
3. Presence of large agricultural land within the city boundary.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

48. Consider the following statements regarding Sour crude oil:

1. Sour crude has a higher sulfur content compared to Sweet crude, making it difficult and expensive to refine.
2. Sour crude, despite its higher sulfur content, yields higher-quality gasoline efficiently.
3. Venezuela is a leading producer of sour crude oil.

Which of the statements given above are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

49. Consider the following statements with regard to Coffee production in India:

1. It is cultivated in the highlands of western ghat.
2. India mostly grows superior-quality Arabica coffee.

Which of the statements given above is/are correct?

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

50. Consider the following pairs:

Steel Cente		***Location***
1. Sheffield	**:**	United Kingdom
2. Pittsburg	**:**	Russia
3. Tienstin	**:**	China

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

51. With reference to nuclear fuel, consider the following statements:

1. Uranium is more common than Thorium in the Earth's crust.
2. Andhra Pradesh is the leading state with the largest uranium reserves followed by Jharkhand.
3. India has more uranium reserves than thorium reserves.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

52. Consider the following statements regarding lithium reserves:

1. The 'Lithium Triangle' refers to a lithium-rich region located in South America.
2. China possesses the largest lithium reserves in the world.

Which of the statements given above is/are correct?

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

53. Consider the following statements regarding the distribution of Mineral resources in India:

1. Most of the metallic minerals in India occur in the peninsular plateau region.
2. The valleys of Damodar, Sone, Mahanadi, and Godavari account for around 90% of coal reserves in India.

Which of the statements given above is/are correct?

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

54. Which phase of population growth in India, referred as the period of "Population Explosion"?

(a) 1901–1921
(b) 1921–1951
(c) 1951-1981
(d) 1981-Present

55. Consider the following minerals:

1. Coal
2. Bauxite
3. Copper

How many of the above generally occur in sedimentary material?

(a) Only one
(b) Only two
(c) All three
(d) None

56. The term 'Yamanaka', sometimes seen in the news, is related to:

(a) A breakthrough in regenerative medicine involving induced pluripotent stem cells.
(b) A traditional Japanese martial art incorporated into modern Olympic sports.
(c) A recently discovered exoplanet with potential for habitability.
(d) A high-altitude mountain pass connecting India and China.

57. The term 'SWAYATT Initiative' is sometimes mentioned in the context of which one of the following?

(a) A government initiative to promote startups, women, and youth entrepreneurs in public procurement through the Government e-Marketplace.
(b) A digital literacy campaign aimed at enhancing AI-based education and skill development in rural areas.
(c) A defence collaboration program for indigenizing advanced weapon systems and military technology.
(d) A global initiative to promote renewable energy adoption and sustainable transport solutions in urban areas.

58. Consider the following energy sources:

1. Natural Gas
2. Firewood
3. Wind
4. Solar Power

How many of the above are considered Conventional Energy Sources?

(a) Only one
(b) ONly two
(c) Only three
(d) All four

59. Consider the following pairs:

Seaport		State
1. Paradip Port	:	Odisha
2. Deendayal Port	:	Maharashtra
3. Marmagao Port	:	Karnataka

How many of the pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

60. Consider the following statements:

1. Anthracite coal is harder and more lustrous than other types of coal.
2. Bituminous Coal has the fewest impurities and higher carbon content of all types of coal.

Which of the statements given above is/are correct?

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

61. Who among the following published the report called 'Our Common Future'?

(a) Brundtland Commission
(b) United Nations Environment Programme
(c) Intergovernmental Panel on Climate Change
(d) Club of Rome

62. Consider the following statements with reference to Agro-Climatic regions of India:

1. National commission on agriculture classified the country into 127 agro-climatic zones.
2. Division of the country into 15 broad agro-climatic zones by the 7th Planning Commission is based on physiography and climate.

Which of the statements given above is/are correct?

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

63. Consider the following statements regarding the global distribution of Steel and Coal:

1. South Africa is the largest steel-producing country in Africa.
2. The United States has the largest share of recoverable coal reserves in the world.
3. China is the top coal exporting country in the world.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

64. Consider the following statements regarding Dokra Artwork:

1. Dokra is an ancient ferrous metal craft made from iron.
2. The Dokra are made in pieces and joints together to form a unique craft.

Which of the statements given above is/are correct?

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

65. Consider the following crops:

1. Oil Palm
2. Natural rubber
3. Cocoa

How many of the above crops are primarily grown in equatorial regions?

(a) Only one
(b) Only two
(c) All three
(d) None

66. With reference to the Coalition for Environmentally Sustainable AI, consider the following statements:

1. It was formed under the United Nations Framework Convention on Climate Change.
2. India is a founding member of Coalition for Environmentally Sustainable AI .
3. It includes both governmental organizations and private technology firms as stakeholders.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 1 only

67. With reference to India's solar power energy targets, consider the following statements:

1. India currently ranks fifth in terms of installed solar power capacity.
2. Since 2011, India's solar sector has grown at a compounded annual growth rate of more than 50%.
3. India has set a target of achieving a total installed capacity of 300GW by 2030 under the Jawaharlal Nehru National Solar Mission.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

68. The term 'Petrification' is sometimes seen in the news. It is a

(a) process of fossilization where organic material is replaced by minerals
(b) new technique for converting plastic waste into biodegradable material
(c) method of preserving ancient manuscripts using chemical treatment
(d) recently developed water purification technology

69. Consider the following statements regarding Mediterranean agriculture:

1. Viticulture is a characteristic feature of this region.
2. Olives, figs, and citrus fruits are commonly cultivated.
3. It is practiced only in countries surrounding the Mediterranean Sea.
4. Fruits and vegetables are typically grown in the winter season.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) Only three
(d) All four

70. Consider the following pairs:

Hydropower Project		***River***
1. Rihand Dam	**:**	Betwa
2. Salal Dam	**:**	Chenab
3. Mettur Dam	**:**	Kaveri

How many of the above pairs is/are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

71. Consider the following statements regarding major world sea routes:

1. The Big Trunk Route primarily connects North America and Europe through the North Atlantic Ocean.
2. The Panama Canal facilitates maritime trade by connecting the Atlantic and Pacific Oceans.

Which of the statements given above is/are correct?

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

72. Consider the following statements with reference to mica in India:

1. Mica is categorised as a minor mineral.
2. Rajasthan has the highest reserves of mica in India.
3. Most of the mica deposits in India produce the muscovite variety or potash mica.

Which of the statements given above is/are correct?

(a) 2 only
(b) 3 only
(c) 1 and 3 only
(d) 2 and 3 only

73. Consider the following pairs :

State		***Shifting Agriculture***
1. Pamlou	**:**	Manipur
2. Bewar	**:**	Madhya Pradesh
3. Kuruwa	**:**	Jharkhand

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

74. Consider the following statements regarding palm oil:

1. Telangana is the largest palm oil producing state in India.
2. India is the largest importer of palm oil in the world.

Which of the statements given above is/are correct?

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

75. Consider the following statements with reference to inland waterways:

1. The Rhine waterway connects the industrial areas of Switzerland and Germany with the North Atlantic Sea Route.
2. The Mississippi-Ohio waterway connects the interior part of the U.S.A. with the Gulf of Mexico.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

76. Consider the following statements regarding Methane Hydrate:

1. Methane hydrate is a solid, ice-like compound in which methane is trapped within a lattice of water molecules.
2. It occurs naturally under high-pressure and low-temperature conditions, such as in deep ocean floors and permafrost regions.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

77. Consider the following:

1. Abolition of the zamindari system.
2. Regulation of land acquisition
3. Tenancy abolition and regulation acts.

How many of the above agrarian reforms were undertaken by the Government of India immediately after independence?

(a) Only one

(b) Only two

(c) All three

(d) None

78. With reference to global population trends, consider the following statements:

1. The world population reached one billion for the first time in the 19th century.
2. Africa is currently the continent with the highest population growth rate.
3. Asia remains the most populous continent in the world.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2, and 3

79. Consider the following statements regarding Super-Aged Societies:

Statement I: Countries like Japan, Italy, and Germany are examples of super-aged societies, facing issues such as shrinking workforce and rising healthcare costs.

Statement II: A super-aged society is one where more than 20% of the population is aged 65 and above, leading to economic and social challenges.

Which one of the following is correct in reference to the above statements?

(a) Both Statement-I and Statement-II are correct, and Statement-II is the correct explanation for Statement-I.

(b) Both Statement-I and Statement-II are correct, but Statement-II is not the correct explanation for Statement-I.

(c) Statement-I is correct, but Statement-II is incorrect.

(d) Statement-I is incorrect, but Statement-II is correct.

80. Consider the following :

1. Iron and Steel Industry
2. Pulp Industry
3. Sugar mills Industry
4. Cotton textile Industry

How many of the above industries are categorized as a weight-losing raw materials-based industry?

(a) Only one

(b) Only two

(c) Only three

(d) All four

81. With reference to the international railway transport, consider the following statements:

1. The Orient express is a trans-continental railway connecting Paris to Istanbul.
2. The Union and Pacific Railways link New York City to San Francisco.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

82. Arrange the following ports in India in a South-North direction:

1. Kandla (Deendayal Port Authority)
2. Tuticorin
3. Vishakhapatnam
4. New Mangalore

Select the correct answer using the code given below.

(a) 1-3-4-2

(b) 2-4-1-3

(c) 1-3-4-2

(d) 2-4-3-1

83. The Centre has announced the addition of four new Ramsar sites in India. How many of the following have been added to the Ramsar Sites List in India?

1. Sakkarakottai Bird Sanctuary
2. Nanjarayan Lake
3. Therthangal Bird Sanctuary
4. Nanda Lake

Select the correct answer using the code given below.

(a) Only one

(b) Only two

(c) Only three

(d) All four

84. Consider the following statements with respect to Indian ports:

1. Kochchi port is situated at the head of Vembanad Kayal.
2. Haldia port is situated in the Mahanadi delta.

Which of the statements given above is/are correct?

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

85. Consider the following statements regarding Demographic Transition Theory:

1. The first stage is characterized by high birth rates and low death rates, leading to rapid population growth.
2. In the second stage, both fertility and mortality decline simultaneously, leading to population stabilization.
3. The final stage is marked by low fertility and low mortality, sometimes resulting in population decline.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 1 and 3 only
(c) 3 only
(d) 1, 2 and 3

86. Consider the following statements:

1. This region experiences extremely low temperatures and has a very short growing season.
2. The vegetation is limited to mosses, lichens, and sedges due to the presence of permafrost.
3. Animal life is scarce but includes cold-adapted species like reindeer and Arctic foxes.

Which of the following types of natural region is described in the statements given above?

(a) Taiga Region
(b) Steppe Region
(c) Tundra Region
(d) Mediterranean Region

87. Consider the following statements with respect to the Kolkhoz model of farming:

1. It was introduced in communist China.
2. It is concerned with both cooperative and collective farming.

Which of the statements given above is/are correct?

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

88. Consider the following statements with respect to the Coal reserves in India:

1. The Coal occurrences in India are mainly distributed along the present-day river valleys.
2. Raniganj is the largest coalfield in the country.

Which of the statements given above is/are correct?

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

89. Consider the following pairs:

Type of Port		*Description*
1. Entrepot Port	:	Collection and distribution center for import and re-export of goods
2. Packet Station	:	Short-distance ferry port for transporting passengers and mail
3. Naval Port	:	May serve both military and commercial shipping purposes

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) All three
(d) None

90. In the context of settlement patterns, a 'double village' refers to:

(a) A settlement spread across both banks of a river, often connected by a bridge or ferry.
(b) A rural settlement that is divided into two sections, one focused on agriculture and the other on trade and manufacturing.
(c) A settlement that exists in two separate locations due to seasonal migration of its inhabitants.
(d) A settlement found along coastal areas that frequently relocates due to the impact of natural disasters.

91. Consider the following pairs:

Tribe	**Region**	**Characteristics**
Yakuts	Congo Basin	Known for their fishing and hunting lifestyle in tropical rainforests
Samoyeds	Siberia	Engage in fishing and hunting along with reindeer herding
Tuaregs	Alaska	Nomadic traders who navigate icy landscapes using sleds

How many of the above pairs are ***incorrectly*** matched?

(a) Only one
(b) Only two
(c) All three
(d) None

92. The HVJ (Hazira-Vijaipur-Jagdishpur) Natural Gas Pipeline passes through how of the following states of India?

1. Gujarat
2. Madhya Pradesh
3. Haryana

Select the correct answer using the code given below.

(a) Only one
(b) Only two
(c) All three
(d) None

93. Consider the following statements about National Waterways:

1. National Waterway-1 is a stretch of the Ganga-Bhagirathi-Hooghly river system, lies between Prayagraj to Haldia.
2. National Waterway-2 is a stretch of the Brahmaputra river between Sadiya and Dhubri.
3. National Waterway-3 is a stretch of the Barak river between Lakhipur and Bhanga.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

94. Consider the following pairs:

Coal Field		***Country***
1. Ruhr		Germany
2. Bowen Basin	**:**	Australia
3. North Antelope Rochelle	**:**	Brazil
4. Fushun	**:**	South Korea

How many of the above pairs are correctly matched?

(a) Only one
(b) Only two
(c) Only three
(d) All four

95. Consider the following statements regarding the sunflower production in India:

1. Its contribution to Indian oilseed production is 25%.
2. It is grown in kharif and rabi seasons across the country.
3. Karnataka is the highest sunflower-producing state in India.

How many of the above statements are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

96. Consider the following cities:

1. Bhubaneswar
2. Patna
3. Varanasi
4. Jaipur
5. Kota

National highway network under Golden Quadrilateral passes through which of the above major cities of India?

(a) 1, 2, and 3 only
(b) 2, 4 and 5 only
(c) 1, 3 and 4 only
(d) 1, 2, 3, 4 and 5

97. Consider the following statements regarding the Hague Service Convention:

1. It is an international treaty that streamlines the process of serving legal documents across international borders.
2. It applies exclusively to civil and commercial matters and excludes criminal cases.
3. India is not a signatory to the Hague Service Convention.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 1 only

98. Arrange the following continents in increasing order of their population density:

1. Asia
2. Europe
3. North America

Select the correct answer using the code given below:

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

99. Consider the following statements regarding tribal settlements in equatorial regions:

1. Equatorial regions are home to Pygmies, Orang Asli, and Yanomami tribes.
2. The majority of indigenous people in equatorial regions rely on hunting, gathering, and shifting cultivation for survival.

Which of the statements given above is/are correct?

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

100. Which of the following are classified as non-ferrous metallic minerals?

1. Copper
2. Bauxite
3. Manganese
4. Cobalt
5. Graphite

Select the correct answer using the code given below:

(a) 1, 2 and 4 only
(b) 1, 3 and 5 only
(c) 2, 3 and 4 only
(d) 1, 2, 3, 4 and 5

ANSWERS & EXPLANATIONS
GENERAL STUDIES (P) TEST – 6313 (2026)

Q 1.B

- **Trans-Siberian Railway**
  - The Trans-Siberian Railway is the longest railway line in the world, running entirely within Russia, from Moscow to Vladivostok.
  - While there is a branch line that connects to Beijing via the Trans-Mongolian route, the main Trans-Siberian line does not pass through China.
  - Hence, statement 1 is not correct.
- **Trans-Canadian Railway**
  - The Trans-Canadian Railway runs from Halifax on the Atlantic coast to Vancouver on the Pacific coast, **crossing the entire width of Canada.**
  - It is a classic example of a transcontinental railway entirely within one country.
  - **Hence, statement 2 is correct.**
- **Union and Pacific Railway**
  - The Union Pacific Railway, combined with the Central Pacific, **was the first railway to connect the east coast (New York) to the west coast (San Francisco) of the United States.**
  - It played a critical role in the economic development and westward expansion of the USA.
  - **Hence, statement 3 is also correct.**

Q 2.D

- In agriculture, water is mainly used for irrigation. Irrigation is needed because of Spatio-temporal variability in rainfall in the country. Provision of irrigation makes multiple cropping possible. It has also been found that irrigated lands have higher agricultural productivity than unirrigated land.
- Further, the high-yielding varieties of crops need regular moisture supply, which is made possible only by developed irrigation systems. **Minor irrigation projects have both surface and groundwater as their source, while Major and Medium projects mostly exploit surface water resources. Hence statement 1 is not correct**.
- Groundwater minor irrigation is primarily done through the individual and cooperative efforts of farmers with the help of institutional finance and their own savings.
- Surface water minor irrigation schemes are generally funded from the public sector only. Irrigation methods:
- **Localized irrigation is a system where water is distributed under low pressure through a piped network, in a pre-determined pattern, and applied as a small discharge to each plant or adjacent to it. It is also known as a low-flow irrigation system/low-volume irrigation/micro-irrigation. Drip irrigation, spray or microsprinkler irrigation, and bubbler irrigation belong to this category of irrigation methods. Hence statement 2 is not correct.**
- Furrow irrigation is conducted by creating small parallel channels along the field length in the direction of the predominant slope. Water is applied to the top end of each furrow and flows down the field under the influence of gravity.

Q 3.A

- **Recent Context: A Study shows Olive Ridley numbers are growing, but rising sand temperatures are skewing gender ratios.**
  - The olive ridley gets its name from the olive green colour of its heart-shaped shell. The species is among the smallest of the world's sea turtles and is found primarily in the tropical regions of the Pacific, Indian, and Atlantic oceans. **Hence statement 1 is not correct.**
  - Olive ridley turtles are found throughout the world. The number of olive ridleys are greatly reduced from historical estimates (for example, 10 million olive ridleys in the Pacific Ocean), due to overexploitation for turtle meat and eggs. Bycatch in fishing gear and the direct harvest of turtles and eggs are the biggest threat facing olive ridleys.
  - Olive ridleys often migrate great distances between feeding and breeding grounds. The olive ridley is omnivorous, meaning it feeds on a wide variety of food items, including algae, lobster, crabs, tunicates, and mollusks. Olive ridleys can dive to depths of 500 feet to forage on benthic invertebrates (those that live on the bottom). **Hence statement 2 is correct.**
  - Olive Ridley turtles are the most abundant sea turtle species, they are currently listed as Vulnerable (not Critically Endangered) on the IUCN Red List of Threatened Species. **Hence statement 3 is not correct.**

Q 4.B

- **Recent Context: New 'Gyan Bharatam Mission' for manuscripts announced in the Union Budget 2025-26**
- **About Gyan Bharatam Mission**
  - The Gyan Bharatam Mission was launched by the government of India to save and promote the heritage of the country's manuscripts. Announced in the Union Budget 2025-26, this scheme will conserve and survey over one crore manuscripts located in museums, libraries, academic institutions and private collections.
  - Objective: To undertake the "survey, documentation and conservation" of more than one crore manuscript heritage lying with academic institutions, museums, libraries, etc.
  - Significance of Mission: Preserving historical value, unveiling ancient Indian knowledge to world, ensuring longevity and round-the-clock access of Manuscripts, etc. To accommodate the new mission, budget allocation for National Manuscripts Mission (NMM) has been hiked from Rs. 3.5 crore to Rs.60 crore.
- **Hence option (b) is the correct answer.**

Q 5.B

- **Context: The US FDA has approved Suzetrigine, a first-in-class non-opioid treatment for moderate-to-severe acute pain.**
- **Opioid**
  - Opioids are a class of drugs that derive from, or mimic, natural substances found in the opium poppy plant, working on opioid receptors in the brain and other organs to produce morphine-like effects, including pain relief.
  - Although opioids are effective as painkillers, they can be addictive. They block pain signals by binding to opioid receptors on nerve cells in the brain, spinal cord, gastrointestinal tract, and other organs in the body.
- **Hence option (b) is the correct answer.**

Q 6.B

- **Weight-losing raw materials**
  - Weight-losing raw materials are materials that lose a significant portion of their weight during the process of manufacturing. For example, copper extracted from copper ore weighs much less than the raw ore used.
  - Industries using such raw materials are generally located near the source of raw materials to reduce transportation costs.
  - For instance, sugar mills are located close to sugarcane-growing regions because sugarcane is bulky and perishable.
  - Similarly, the pulp industry, copper smelting, and pig iron production are also situated close to raw material sources.
  - In the iron and steel industry, both iron ore and coal are weight-losing materials, hence such industries are mostly found near coalfields (e.g., Bokaro, Durgapur) or near iron ore mines (e.g., Bhilai, Rourkela).

- **Aluminium Smelting Industry:**
  - Aluminium is extracted from bauxite, which is a **weight-losing raw material.**
  - The process leaves behind red mud and other residues.
  - This is a weight-losing industry. **Hence option 1 is correct.**
- **Paper Manufacturing Industry:**
  - Based on pulp, which is derived from bulky wood or bamboo.
  - The raw material **loses significant mass during processing.**
  - This is a weight-losing industry. **Hence option 2 is correct.**
- **Tea Processing Industry:**
  - Tea leaves are **highly perishable and lose moisture during processing.**
  - Located in hilly regions near plantations.
  - This is a weight-losing and perishable raw material-based industry. **Hence option 3 is correct.**
- **Textile Garment Industry:**
  - **Uses cotton or synthetic fibres which are not weight-losing.**
  - These industries are often market-oriented, located in urban areas like Mumbai, Ahmedabad, etc.
  - This is not a weight-losing industry. **Hence option 4 is not correct.**

Q 7.D

- **Bauxite is an ore that is used in the production of aluminium. Hence statement 1 is not correct. India is poorly endowed with non-ferrous metallic minerals except bauxite.**
- Bauxite is primarily comprised of aluminum oxide compounds (alumina), silica, iron oxides and titanium dioxide. Approximately 70 percent of the world's bauxite production is refined through the Bayer chemical process into alumina. Alumina is then refined into pure aluminum metal through the Hall–Héroult electrolytic process.
- **Bauxite is found mainly in tertiary deposits and is associated with laterite rocks occurring extensively either on the plateau or hill ranges of peninsular India and also in the coastal tracts of the country. Hence statement 2 is not correct.**
- Odisha is the largest producer of bauxite. Kalahandi and Sambalpur are the leading producers. Bolangir and Koraput have also increased their production in the recent years.
- The patlands of Lohardaga in Jharkhand have rich deposits. Gujarat, Chhattisgarh, Madhya Pradesh and Maharashtra are other major producers.
- Tamil Nadu, Karnataka and Goa are minor producers of bauxite.

Q 8.A

- Rural settlements are heavily dependent on their geographical and climatic conditions for construction materials. For example:
  - Houses in desert regions (e.g., Rajasthan) use thick mud walls and small windows to prevent heat.
  - In mountainous areas (e.g., the Himalayas), houses are made of stone and wood to withstand cold weather.
  - In flood-prone areas (e.g., Assam), houses are built on stilts to avoid water damage.
  - Thus, climate and local resources directly impact rural house design. **Hence, statement 1 is correct.**
- The primary sector (agriculture, fishing, forestry, and livestock rearing) is the dominant source of livelihood in rural settlements.
  - The secondary sector (manufacturing, construction, etc.) and tertiary sector (services, trade, education, healthcare, etc.) are more prominent in urban areas.
  - While some secondary activities (like handicrafts, pottery, and small-scale industries) exist in rural areas, they are not the predominant source of livelihood. **Hence, statement 2 is not correct.**

Q 9.A

- A linear settlement typically develops along roads, rivers, railway lines, or coastlines, not around a central feature.
- **Hence, pair 1 is not correctly matched.**
- A circular settlement is arranged around a central feature such as a lake, temple, well, or market square, rather than along transport routes.
- **Hence, pair 2 is not correctly matched.**
- A rectangular settlement follows a planned layout where roads and streets intersect at right angles, forming a grid pattern.
  - This is commonly seen in urban planning and agricultural colonies.

- **Hence, pair 3 is correctly matched.**
- **Star-like pattern: Where several roads converge, star-shaped settlements develop by the houses** built along the roads
- **T-shaped, Y-shaped, Cross-shaped, or cruciform settlements:** T-shaped settlements develop at trijunctions of the roads while Y-shaped settlements emerge as the places where two roads converge on the third one and houses are built along these roads. Cruciform settlements developed on the crossroads, and houses extended in all four directions.

Q 10.C

- **The density of population** is defined as the ratio of the total number of people per unit area of land. It is a **crude measure** of human and land relationships. To get a better insight into the human-land ratio in terms of pressure of population on total cultivable land, the physiological and the agricultural densities should be found out which are significant for a country like India having a large agricultural population.
- **Physiological density refers to the number of people per unit area of net cultivable land.** It is a basic indicator of a country's food-producing capability and the human pressures placed upon it.
  - **Physiological density = total population / net cultivated area**
  - **Hence option (c) is the correct answer.**
- **Agricultural density** refers to the total number of agricultural population per unit area of net cultivable area. Here Agricultural population includes cultivators and agricultural labourers and their family members.
  - **Agricultural density = total agricultural population / net cultivable area**

Q 11.B

- The Crude Birth Rate (CBR) is actually measured as the number of births per 1,000 people in a given year, not per 10,000 people.
- CBR = (Total births in a year / Mid-year population) × 1,000.
- **Hence, statement 1 is not correct.**
- Natural Growth of Population is determined by the difference between birth rate and death rate, excluding the impact of migration.
  - Natural Growth of Population is calculated as: Natural Growth = Birth Rate - Death Rate
  - It does not include migration, which differentiates it from total population growth.
- Total Population Growth accounts for both natural growth and net migration.
  - Total Population Growth considers both: Natural Increase (Birth Rate - Death Rate)
    - Net Migration (Immigration - Emigration)
    - This is a comprehensive measure of population change.
- **Hence, statement 3 is correct.**

Q 12.B

- Steel is a key sector of the Indian economy**. India is the world's second-largest producer of crude steel and second-largest consumer of finished steel. In FY 21-22, the sector contributed approximately 2% to the country's GDP and provided approximately 20 lakh jobs. Moreover, the sector is set for significant growth: the National Steel Policy has set a target to reach 300 million tonnes (MT) of annual production by 2030 from the existing level of 120 MT.Hence, statement 1 is not correct.**
- The availability of scrap is a major issue in India and in 2017 the deficit was to the tune of 7 million Tons. This was imported at the cost of more than Rs. 24,500 crores (approx.) in 2017-18. The gap between demand and supply is can be reduced in the future and the country may be self-sufficient by 2030. This is mainly because, with the increase in consumption of steel in the recent past and end-of-life vehicles (ELV), the generation of scrap is likely to be increased considerably. This scrap has to be channelized so that the same can be utilized for steel production in an environmentally friendly manner.
- **Steel Authority of India Limited (SAIL) is the largest steel-making company in India and one of the seven Maharatnas of the country's Central Public Sector Enterprises. Hence, statement 2 is correct.**

Q 13.A

- **Indian Railways, network is one of the longest in the world. It is the fourth largest in the world in terms of the network after America (2,50,000 km), China (1,00,000 km), and Russia (85,000 km). Hence, statement 1 is correct .**
- It facilitates the movement of both freight and passengers and contributes to the growth of the economy.
- Indian Railway was introduced in 1853, when a line was constructed from Bombay to Thane covering a distance of 34 km.
- Indian Railways is the largest government undertaking in the country. The length of the Indian Railways network was 67,956 km (2019-20).
- On the basis of the width of the track of the Indian Railways, three categories have been made:
- Broad gauge:
- **The distance between rails in broad gauge is 1.676 metres. The total length of broad gauge lines was 63950 km (2019-20). Hence statement 2 is not correct.**
- Metre gauge: The distance between rails is one metre. Its total length was 2402 km (2019-20).
- Narrow gauge: The distance between the rails in this case is 0.762 metres or 0.610 metres. The total length of the narrow gauge was 1604 km (2019-20). It is generally confined to hilly areas.
- Indian Railways has launched an extensive programme to convert the metre and narrow gauges to broad gauge.

Q 14.A

- Economic activities result in the production of goods and services while sectors are the group of economic activities classified on the basis of some criteria. They are broadly grouped into primary, secondary, tertiary and quaternary activities.
    - **Primary activities** are directly dependent on environment as these refer to utilisation of earth's resources such as land, water, vegetation, building materials and minerals. It, thus includes, hunting and gathering, pastoral activities, fishing, forestry, agriculture, and mining and quarrying. People engaged in primary activities are called **red-collar workers due to the outdoor nature of their work. Hence option (a) is the correct answer.**
    - **Secondary activities** add value to natural resources by transforming raw materials into valuable products. Secondary activities, therefore, are concerned with manufacturing, processing and construction (infrastructure) industries. People engaged in secondary activities are called **blue-collar workers.**
    - **Quinary Activities** is the part of the economy where the top-level decisions are made. It focus on the creation, re-arrangement and interpretation of new and existing ideas; data interpretation and the use and evaluation of new technologies. Profession under this category often referred as '**gold collar**' professions, they represent another subdivision of the tertiary sector representing special and highly paid skills of senior business executives, government officials, research scientists, financial and legal consultants, etc.
    - Quaternary activities involve some of the following: the collection, production and dissemination of information or even the production of information. Quaternary activities centre around research, development and may be seen as an advanced form of services involving specialised knowledge and technical skills.

Q 15.C

- The Age-Sex Pyramid, also known as the population pyramid, provides insights into a country's population structure. A narrow base in the pyramid suggests low birth rates and an aging population—a characteristic commonly found in developed countries experiencing demographic transition.
- Japan → Aging population with low birth rates → Narrow base
- Germany → Aging population with low birth rates → Narrow base
- Italy → Aging population with low birth rates → Narrow base
- Nigeria → High birth rates, young population → Wide base
- Japan, Germany, and Italy, all have narrow-based pyramids.
- Nigeria does not, as it has a youthful population with high birth rates.
- **Hence, option (c) is the correct answer.**

Q 16.D

- Extensive Commercial grain cultivation is practiced in the interior parts of semi-arid lands of the midlatitudes. **Hence statement (a) is correct.**
- Wheat is the principal crop, though other crops like corn, barley, oats, and rye are also grown. **Hence statement (b) is correct.**
- The size of the farm is very large, therefore entire operations of cultivation from ploughing to harvesting are mechanized. **Hence statement (c) is correct.**
- There is a low yield per acre but a high yield per person. **Hence statement (d) is not correct.**
    - Efforts are always made to maximize per capita production in lieu of per unit land production. Each farmer controls and cultivates extensive farmland. **So per capita production increases significantly.**
    - **Due to the extensive nature of the cropping patterns, productivity per unit area of land remains very low**. Only in some parts of north-western Europe is productivity at par with intensive farming. In the rest of the extensive farming region, productivity often goes lower than intensive farming.
- This type of agriculture is best developed in Eurasian steppes, the Canadian and American Prairies, the Pampas of Argentina, the Velds of South Africa, the Australian Downs, and the Canterbury Plains of New Zealand.

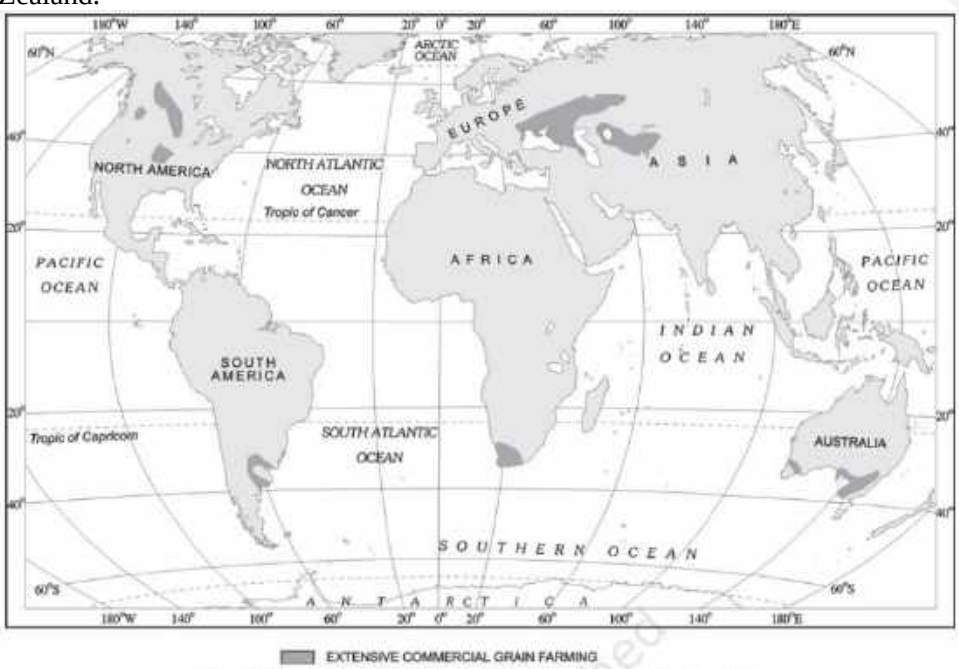


Fig. 5.12: Areas of Extensive Commercial Grain Farming

Q 17.A

- **Context: Prime Minister praised the efforts of Soliga tribe in increasing the tiger population in Biligiri Ranganatha Swamy Temple (BRT) Tiger Reserve.**
- **About Soliga Tribe**
    - Soligas are nomadic people who live in the Biligiriranga Hills region of Southern Karnataka and some parts of Tamil Nadu. In 2011, they became first tribal community living inside a tiger reserve to get legal rights to the forest. They live off forest produce like honey, berries and timber and practice subsistence agriculture. They speak Soliga, a Dravidian language closely related to Kannada. They worship tigers as sacred beings and refer to the tiger as Dodda Nayi. **Hence statement 1 is not correct.**
    - While the Soligas are a Scheduled Tribe (ST) in Karnataka, they are not classified as a Particularly Vulnerable Tribal Group (PVTG) by the Government of India. **Hence statement 2 is not correct.**
    - The term "Soliga" literally translates to "children of bamboo", which reflects the tribe's relationship with nature and their belief that they too have emerged from it. The Soliga language is a Dravidian one, closely related to Kannada, and often referred to by the community as ‘namma Kannada’ (our Kannada), ‘namma baase’ (our language), or ‘Soliga baase’, says Aung Si, a linguist who has been working with the community since 2008, even developing a dictionary in the Soliga language. **Hence statement 3 is correct.**
    - Like many indigenous people around the world, the Soligas’ unique traditions and culture, including language, are fast-eroding, catalysed by several factors, including changing lifestyles, exposure to the outside world, limited access to forests and their products, social hegemonies, ecosystem degradation and cultural alienation among the youth.

Q 18.C

- In India, there are different streams of migration. Under the internal migration, four streams are identified: rural to rural, rural to urban, urban and urban, urban and rural.The distribution of male and female migrants in different streams of intra-state and inter-state migration is presented.

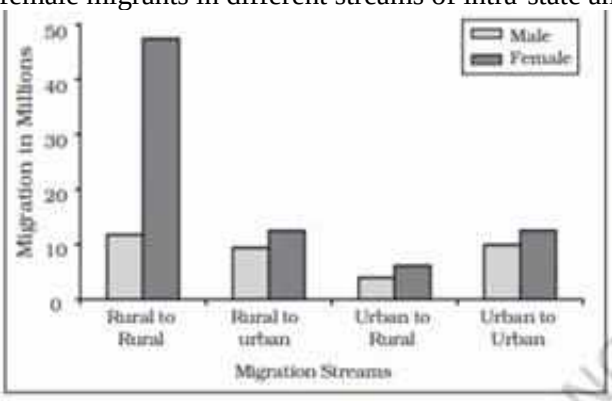


Fig. 2.1 a : Intra-state Migration by Place of Last Residence Indicating Migration Streams India, 2011

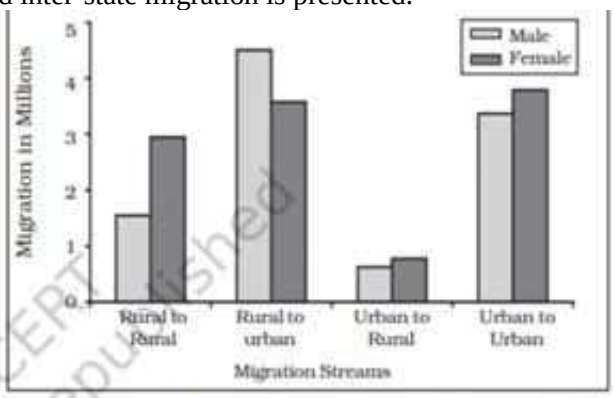


Fig. 2.1 b : Inter-state Migration by Place of Last Residence Indicating Migration Streams India, 2011

- It is clearly evident that **females predominate the streams of short distance rural to rural migration in both types of migration**. Most of these were migrants related to marriage. **Hence statement-I is correct**.
- Contrary to this, men predominate the rural to an urban stream of inter-state migration due to economic reasons. **Hence statement-II is correct.**
- The reasons for the migration of males and females are different. For example, **work and employment have remained the main cause for male migration (26 per cent)** while it is only 2.3 per cent for females. **Contrary to this, about 67 per cent of females move out from their parental houses following their marriage.**

Q 19.C

- **Capability Approach:** This approach is associated with Prof. Amartya Sen. **Building human capabilities in the areas of health, education, and access to resources is the key to increasing human development. Hence option (c) is the correct answer.**
- **Other approaches of human development:**
  - **Income Approach:** This is one of the oldest approaches to human development. Human development **is** seen as being linked to income. The idea is that the level of income reflects the level of freedom an individual enjoys. The higher the level of income, the higher is the level of human development.
  - **Welfare Approach:** This approach looks at human beings as beneficiaries or targets of all development activities. The approach argues for higher government expenditure on education, health, social secondary, and amenities. People are not participants in development but only passive recipients. The government is responsible for increasing levels of human development by maximizing expenditure on welfare.
  - **Basic Needs Approach:** This approach was initially proposed by the International Labour Organisation (ILO). Six basic needs i.e.: health, education, food, water supply, sanitation, and housing were identified. The question of human choices is ignored and the emphasis is on the provision of basic needs of defined sections.

Q 20.B

- **Shifting Cultivation**
  - Shifting cultivation, locally called 'Jhum', is a widely practiced system of crop cultivation among the indigenous communities of Northeast India. Slash and burn cultivation is called 'Podu Chaso' in the tribal regions of Orissa. The practice, also known as slash-and-burn agriculture, is when farmers clear land by slashing vegetation and burning forests and woodlands to create clear land for agricultural purposes.
  - This provides a very easy and very fast method of the preparation of the land for agriculture. The bush and the weeds can be removed easily. The burning of waste materials provides needed nutrients for the cultivation. It gives a family its food, fodder, fuel, livelihood and is closely linked to its identity. Because of the cutting of forests and trees, this practice leads to soil erosion and may also affect the course of rivers.

- **Different local names used for shifting cultivation in different countries:**
  - **Ladang: Malaysia**
  - **Taungya: Burma**
  - Tamrai: Thailand
  - Caingin: Philippines
  - Humah: Java
  - Chena: Sri Lanka
  - **Milpa: Africa, Central America, and Mexico**
- **Hence option (b) is the correct answer.**

Q 21.B

- **Chuquicamata is the world's largest copper town located in Chile in the Atacama Desert.** Other towns in Chile known for copper production are Arica, Iquique and Antofagasta. **Hence, pair 1 is correctly matched.**
- **Kalgoorlie is a gold mine located in Australia** and it is part of the Great Australian Desert. Another important town for gold mining in Australia is Coolgardie. Besides this, the Kalahari desert is also known for its diamond and copper reserves. **Hence, pair 2 is correctly matched.**
- **Utah** is located in the **Nevada desert in the U.S.A.** It is known for **Uranium mining. Hence, pair 3 is not correctly matched.**

Q 22.B

- **Quinary activities** are the highest level of economic activities involving decision-making, knowledge dissemination, and high-level services. These are generally performed by professionals, intellectuals, policy-makers, and top executives.
- They are part of the tertiary sector but are often distinguished because of their intellectual, managerial, or leadership-based functions.
- Quaternary and Quinary Activities:
  - Quaternary activities involve collection, processing, and dissemination of information. These include research and development (R&D) and other fields requiring specialized knowledge and technical expertise.
  - Quinary activities are at the top level of services and focus on the creation, interpretation, and evaluation of new ideas and technologies.
  - These are performed by senior executives, decision-makers, policymakers, researchers, and consultants.
  - Also known as "gold collar" professions, they require high levels of skill and command high salaries.
  - Examples include **scientific research, high-level government policy-making, and university-level teaching. Hence options 1, 3 and 4 are correct.**
  - **Food processing is a manufacturing activity, not a service or intellectual work**. It is a secondary activity, not quinary. **Hence option 2 is not correct.**

Q 23.D

- **The Child Sex Ratio i**s defined as thenumber of females per 1000 males in the age group 0–6 years. **In the census 2001 the child sex ratio of India was 927 which declined to 918 in the census 2011. Hence statement 1 is not correct.**
- As per the census 2011, Arunachal Pradesh has the highest child sex ratio among the Indian states i.e. 972 while Haryana has the lowest child sex ratio i.e.834 per thousand males. Among the Union Territories of India; Andaman and Nicobar Islands has the highest child sex ratio i.e. 968 per thousand males.
- The **findings of the 2011 Census of India are very disturbing particularly in the case of the child sex ratio (919) in the age group of 0-6 years**. The other significant features of the report are, with the exception of Kerala, the child sex ratio has declined in all the states and it is the most alarming in the **developed state of Haryana (834) and Punjab (846)** where it is below 850 female children per thousand male children. **Hence statement 2 is not correct.**

Q 24.A

- **Context: Recently, Indirect Prompt Injection (IPI) has become an emerging security threat for manipulating AI Chatbots.**
  - Indirect prompt injection exploits the inherent nature of large language models (LLMs) to follow instructions embedded within the content they process. This method was recently highlighted by cybersecurity researcher Johann Rehberger, who demonstrated how Google's Gemini chatbot could be manipulated. By embedding malicious instructions within seemingly benign documents or emails, attackers can induce chatbots to perform unauthorised actions, such as searching for sensitive information or altering long-term memory settings.
  - One of the most alarming aspects of these attacks is their ability to corrupt the chatbot's long-term memory. As AI chatbots become increasingly integrated into daily life, the security of these systems is paramount. The ongoing battle between developers and hackers underscores the need for continuous innovation in AI security. While current mitigations provide some protection, the fundamental issue of indirect prompt injection remains unresolved.
- **Hence option (a) is the correct answer.**

Q 25.D

- **Context**: Environmental activists raised concerns over the rapidly declining water levels in the Caspian Sea. It has already lost nearly 31,000 square km since 2005.
- **About** Caspian Sea
  - It is the largest enclosed water body in the world. It's located between Europe and Asia.
  - It's bordered by:
    - Kazakhstan (northeast)
    - Russia (northwest)
    - Azerbaijan (southwest)
    - Iran (south)
    - Turkmenistan (southeast)
- Kazakhstan has the longest coastline along the Caspian Sea. Its oil reserves are estimated at 48 billion barrels. **Reasons** for declining water level: The climate crisis, excessive water use for agriculture, and pollution from nuclear waste, industry and poor urban planning, etc
- **Characteristics:**
  - It's an endorheic basin (meaning it has no outflow to oceans).
  - It has a salinity that's about one-third of average seawater.
  - It's known for its significant oil and natural gas reserves, as well as its caviar production.
  - It is home to the Caspian seal, which is an endemic mammal.

- **Hence option (d) is the correct answer.**

Q 26.C

- **Context: In the Re Policy Strategy for Grant of Bail case, the SC issued directions regarding the power of appropriate Government to remit the whole/a part of sentence of convicts.**
  - Both the President and the Governor have been vested with the sovereign power of pardon by the Constitution, commonly referred to as mercy or clemency power. Under Article 72, the President can grant pardons, reprieves, respites or remissions of punishment or suspend, remit or commute the sentence of any person convicted of any offence in all cases where the punishment or sentence is by a court-martial, in all cases where the punishment or sentence is for an offence under any law relating to the Union government's executive power, and in all cases of death sentences. It is also made clear that the President's power will not in any way affect a Governor's power to commute a death sentence. **Hence statement 1 is correct.**
  - Under Article 161, a Governor can grant pardons, reprieves, respites or remissions of punishment, or suspend, remit or commute the sentence of anyone convicted under any law on a matter which comes under the State's executive power.
  - The Code of Criminal Procedure (CrPC) provides for remission of prison sentences, which means the whole or a part of the sentence may be cancelled. Under Section 432, the 'appropriate government' may suspend or remit a sentence, in whole or in part, with or without conditions. This power is available to State governments so that they may order the release of prisoners before they complete their prison terms. Under Section 433, any sentence may be commuted to a lesser one by the appropriate government. However, Section 435 says that if the prisoner had been sentenced in a case investigated by the CBI, or any agency that probed the offence under a Central Act, the State government can order such release only in consultation with the Central government. H**ence statement 2 is correct.**

Q 27.C

- The Human Poverty Index (HPI) was an indication of the poverty of a community in a country, developed by the United Nations to complement the Human Development Index (HDI) and was first reported as part of the Human Deprivation Report in 1997. In 2010, it was supplanted by the UN's Multidimensional Poverty Index.
- The **Human Poverty Index** measures shortfalls in Human Development. It is a **non-income measure**. **Hence option 1 is not correct**
- **Parameters that are taken into account while calculating HPI are:**
  - The probability of **not surviving till the age of 40**
  - **The adult illiteracy rate**
  - **The number of people who do not have access to clean water**
  - **The number of small children who are underweight. Hence option 2 and option 3 are correct.**
- Since 1990, the United Nations Development Programme (UNDP) has been publishing the Human Development Report every year. This report provides a rank-wise list of all member countries according to the level of human development. The Human Development Index and the Human Poverty index are two important indices to measure human development used by the UNDP.

Q 28.D

- **Context: UNCCD releases report on Land Restoration for International Peace and Security.**
- **Land Restoration for International Peace and Security**
  - Land Restoration for International Peace and Security is a collaborative effort led by the Secretariat of the United Nations Convention to Combat Desertification (UNCCD) with adelphi, and numerous partners and experts.
  - It highlights that cooperation over management of shared natural resources/ecosystem restoration can pave way for broader political agreements and even prevent conflict.
- The link between land degradation and global conflicts
  - Loss of economic opportunities: Land degradation can nudge the negatively affected communities towards criminal activities. Eg. smuggling, and human trafficking.
  - Food insecurity: Recurrent crop failures and rising inflation increases risk of political and economic turmoil in the country. Eg. Clashes in Somalia.
  - Human mobility: Land degradation can increase migration and displacement.

- Increasing inequalities: It leads to marginalisation and discrimination of minority and vulnerable groups.
- Governance: Weakened land-related governance structures can escalate conflict, including across borders. Eg. In the Amazon rainforest, weak environmental governance led to conflicts between Brazil, Peru, and Colombia.

- **Hence option (d) is the correct answer.**

Q 29.B

- Petroleum is not evenly distributed around the world. More than half of the world's proven oil reserves are located in the Middle East. Following the Middle East, the largest reserves are in Canada and the United States, Latin America, Africa, and the former Soviet Union, each containing less than 15% of the world's proven reserves.
- The nearly 280 world-class giant oil fields, along with super-giants, account for about 80% of the world's known recoverable oil. Additionally, there are approximately 1,000 known large oil fields that initially contained between 50 million and 500 million barrels, contributing to 14-16% of the world's known oil.
- **Major Oil Fields Across the World**
  - Ghawar field – Saudi Arabia
  - **Burgan field – Kuwait**
  - Azeri-Chirag-Guneshli – Caspian Sea, Azerbaijan
  - Ku-Maloob-Zaap – Mexico
  - Zakum field – UAE
  - Ferdows field – Iran
  - **Sugar Loaf field – Brazil**
  - Bolivar Coastal field – Venezuela
- **World's Five Largest Offshore Oil Fields**
  - **Safaniya oilfield – Persian Gulf, Saudi Arabia**
  - Upper Zakum oilfield – Persian Gulf, UAE
  - Manifa oilfield – Persian Gulf, Saudi Arabia
  - Kashagan oilfield – Caspian Sea, Kazakhstan
  - **Lula oilfield – Brazil**
- **Hence option (a) is the correct answer.**

Q 30.B

- **The passage provides key characteristics of the tribe :**
  - Nomadic lifestyle – The tribe originally wandered in the central highlands of East Africa.
  - Present-day location – They are now confined to reserves in Kenya and Tanzania.
  - Primary occupation – The tribe is heavily dependent on cattle rearing, especially Zebu cattle, which have humps and long horns.
  - Cultural practices – They consume milk and blood from their cattle but do not traditionally slaughter them for meat.
- Berbers
  - The Berbers are a North African ethnic group, mainly found in Morocco, Algeria, Tunisia, and the Sahara Desert.
  - They are not associated with Kenya or Tanzania, nor do they have a culture based on cattle herding like the one described.
- Masai
  - The Masai (also spelled Maasai) are a nomadic pastoralist tribe of Kenya and Tanzania.
  - Their economy revolves around cattle rearing, and Zebu cattle are a key part of their livelihood.
  - A significant cultural aspect of the Masai is drinking cattle blood mixed with milk, which is an important source of nutrition.
  - They traditionally do not slaughter cattle for meat, making this a perfect match with the passage. **Hence, option (b) is the correct answer.**
- Bedouins
  - The Bedouins are nomadic Arab tribes found in desert regions of the Middle East and North Africa, such as Saudi Arabia, Jordan, and Egypt.
  - They primarily rely on camel and goat herding, not cattle rearing.
  - They are not found in East Africa.

- Bushmen
  - The Bushmen (also known as San people) are hunter-gatherers living in the Kalahari Desert (Botswana, Namibia, and South Africa).
  - They rely on hunting and foraging, not cattle rearing.
  - They have no known traditions involving drinking milk or blood.

Q 31.A

- Rural settlements in India can broadly be put into four types: **Clustered; Semi-clustered or fragmented; Hamleted, and Dispersed.**
  - **Semi-Clustered Settlements:** These may result from the tendency of clustering in a restricted area of dispersed settlement. Generally, the land-owning and dominant community occupy the central part of the main village, whereas people of lower strata of society and menial workers settle on the outer flanks of the village. **Such settlements are widespread in the Gujarat plain and some parts of Rajasthan. Hence option (a) is the correct answer.**
  - **Hamleted Settlements:** Sometimes settlement is fragmented into several units physically separated from each other bearing a common name. More frequently found in the middle and lower Ganga plain, Chhattisgarh, and lower valleys of the Himalayas.
  - **Dispersed Settlements:** Dispersed or isolated settlement pattern in India appears in the form of isolated huts or hamlets of few huts in remote jungles, or on small hills with farms or pasture on the slopes. Many areas of Meghalaya, Uttaranchal, Himachal Pradesh, and Kerala have this type of settlement.

Q 32.D

- **Context: A new study estimates the physical parameters of thermal & magnetic field structures of solar coronal holes.**
  - Coronal holes appear as dark areas in the solar corona in extreme ultraviolet (EUV) and soft X-ray solar images. They appear dark because they are cooler, less dense regions than the surrounding plasma and are regions of open, unipolar magnetic fields. This open, magnetic field line structure allows the solar wind to escape more readily into space, resulting in streams of relatively fast solar wind and is often referred to as a high-speed stream in the context of analysis of structures in interplanetary space.
  - Coronal holes can develop at any time and location on the Sun, but are more common and persistent during the years around solar minimum. The more persistent coronal holes can sometimes last through several solar rotations (27-day periods).
  - Coronal holes are most prevalent and stable at the solar north and south poles; but these polar holes can grow and expand to lower solar latitudes. It is also possible for coronal holes to develop in isolation from the polar holes; or for an extension of a polar hole to split off and become an isolated structure.
  - Persistent coronal holes are long-lasting sources for high speed solar wind streams. As the high speed stream interacts with the relatively slower ambient solar wind, a compression region forms, known as a co-rotating interaction region (CIR). From the perspective of a fixed observer in interplanetary space, the CIR will be seen to lead the coronal hole high speed stream (CH HSS).
- **Hence option (d) is the correct answer.**

Q 33.A

- **Manganese is not found as a free element in nature. It is often found in combination with iron. It is an important raw material for smelting iron ore and also used for manufacturing ferroalloys. Hence, statement 1 is correct.**
- India possesses the second-largest reserves in the world after Zimbabwe and is the fifth-largest producer.
- Manganese deposits are found in almost all geological formations, however, it is mainly associated with Dharwar system.
- **Odisha is the leading producer of Manganese. Hence statement 2 is not correct.**
- Major mines in Odisha are located in the central part of the iron ore belt of India, particularly in Bonai, Kendujhar, Sundergarh, Gangpur, Koraput, Kalahandi, and Bolangir.
- Karnataka is another major producer and here the mines are located in Dharwar, Ballari, Belagavi, North Canara, Chikkmagaluru, Shivamogga, Chitradurg, and Tumakuru.
- Maharashtra is also an important producer of manganese, which is mined in Nagpur, Bhandara, and Ratnagiri districts. Telangana, Goa, and Jharkhand are other minor producers of manganese.

Q 34.C

- One of the important achievements of the Indian Railways has been the **construction of the Konkan Railway in 1998**. It is a **760 km long rail** route **connecting Roha in Maharashtra to Mangalore in Karnataka.**
- It is considered an engineering marvel. It crosses 146 rivers, streams, nearly 2000 bridges, and 91 tunnels.
- The 756.25 km (469.91 mi) long railway line **connects the states of Maharashtra, Goa, and Karnataka. Tamil Nadu is not covered under the Konkan Railways network.**
- **Hence, option (c) is the correct answer.**

Q 35.C

- **Context: India- UAE CEPA was signed on 18th February 2022 and entered into force on 1st May 2022.**
  - CEPA refers to a Comprehensive Economic Partnership Agreement, a type of free trade agreement that goes beyond traditional free trade agreements by covering a wider range of areas like services, investment, and intellectual property, aiming for a more holistic economic partnership.
  - India has signed CEPA with the following countries:
    - South Korea (Signed in 2009)
    - Japan (Signed in 2011)
    - UAE (Signed in 2022)
- **About India-UAE CEPA**
  - It is the first deep and full-fledged Free Trade Agreement, signed by India with any country in the past decade. It covers Trade in Goods and Services, Pharmaceutical products, IPR, Investment, etc.
- **Significance of India- UAE CEPA**
  - Boost bilateral trade in goods to US$100 billion and trade in services to US$15 billion over next five years.
  - Create more than one million jobs opportunities for Indian workforce through enhanced trade liberalisation and market access.
  - Enable preferential market access for India's labour-intensive goods like textiles, engineering goods etc.
  - Ensure zero-duty market access for 90% of exports from UAE into India, benefitting UAE commodity exporters of petrol chemicals, aluminium, and copper.
  - Enhance Indian exporters' access to UAE's neighbouring regions, especially Gulf Cooperation Council states.
- **Hence option (c) is the correct answer.**

Q 36.C

- India stands second as a world producer of sugar but occupies the first place in the production of gur and khandsari. The raw material used in this industry is bulky, and in haulage its sucrose content reduces. The mills are located in Uttar Pradesh, Bihar, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Gujarat, Punjab, Haryana and Madhya Pradesh. Sixty per cent mills are in Uttar Pradesh and Bihar. This industry is seasonal in nature so, it is ideally suited to the cooperative sector.
- **In recent years, there is a tendency for the mills to shift and concentrate in the southern and western states**, especially in Maharashtra. Reasons being:
  - The tropical climate of Peninsular India results in higher yield per unit hectare of land.
  - Higher sucrose content in peninsular cane o Long crushing season in south. In North India, it lasts from November to February (4 months); while in South it lasts from October to May or even June (nearly 8 months)
  - **The mills in peninsular India are larger. Though Uttar Pradesh has more sugar mills than Maharashtra yet Maharashtra's sugar mills are larger in size & Capacity. Further, the mills in cooperative sector in south are better managed. Hence, option (c) is correct.**

Q 37.C

- Rice is the staple crop of India, and every day millions of Indians find comfort in it. **With a high carbohydrate content, it is known to provide instant energy and is a staple that is consumed by the majority of India's population.**
  - It is a Kharif crop that requires high temperature, (above 25°C) and high humidity with annual rainfall above 100 cm. **Hence statement 2 is not correct.**
  - **In areas with less rainfall, it grows with the help of irrigation**. Rice is grown in the plains of north and north-eastern India, coastal areas, and the deltaic regions. The development of a dense network of canal irrigation and tubewells have made it possible to grow rice in areas of less rainfall such as Punjab, Haryana, western Uttar Pradesh, and parts of Rajasthan.

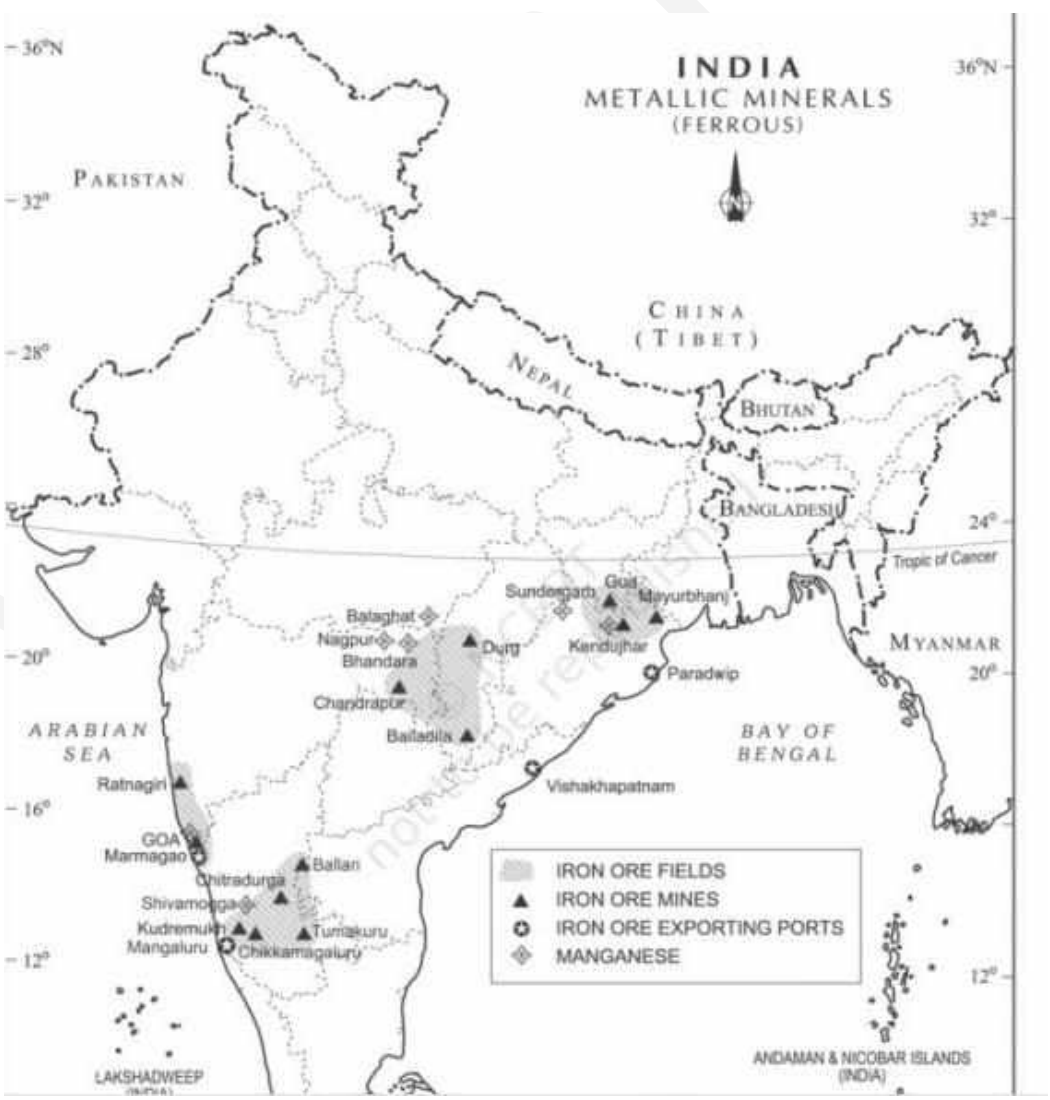
- In southern states and West Bengal, the climatic conditions allow the cultivation of two or three crops of rice in an agricultural year. **In West Bengal farmers grow three crops of rice called 'aus', 'aman', and 'boro'. But in the Himalayas and northwestern parts of the country, it is grown as a Kharif crop during the Southwest Monsoon season.**

- **India contributes 21.9 percent of rice production in the world and ranked second after China in 2017.** About one-fourth of the total cropped area in the country is under rice cultivation. **Hence statement 3 is correct.**
- Rice being a tropical and sub-tropical plant requires a fairly high temperature of more than 22°C and an amount of rainfall of more than 100 cm. Irrigation is necessary for areas of lesser rainfall. Clayey alluvial soil in which water can remain standing is ideal for rice. **Hence statement 1 is not correct.**
- In India, rice is grown in almost half the states, with **West Bengal leading the way in terms of production with 14.71 million tonnes, followed by Uttar Pradesh (12.22 million tonnes) and Andhra Pradesh (11.57 million tonnes) as per the Agricultural Statistics 2014-15, Ministry of Agriculture & Farmers Welfare of the Government of India.**

Q 38.C

- On the basis of the main source of moisture for crops, farming can be classified as irrigated and rainfed (barani).
  - Rainfed farming is further classified on the basis of the adequacy of soil moisture during the cropping season into dryland and wetland farming. **In India, Dryland farming is largely confined to regions having an annual rainfall of less than 75 cm. Hence, statement 1 is correct.**
  - **These regions grow hardy and drought-resistant crops** such as ragi, bajra, moong, gram and guar (fodder crops) and practice various measures of soil moisture conservation and rainwater harvesting. **Hence, statement 2 is correct.**

Q 39.A



- **The, option (a) is the correct answer.**

Q 40.C

- **Truck farming :**
  - Truck farming refers to the large-scale cultivation of vegetables for supply to distant markets.
  - Truck farming is a form of market-oriented farming that specializes in growing vegetables on a large scale for supply to urban markets located at a distance.
  - The name "truck" refers to the transportation of goods, not the vehicle itself, and the farms are typically located at a distance that can be covered overnight by a truck.
  - It is labour- and capital-intensive, and usually relies on irrigation, fertilizers, and good transport connectivity to urban centers.
  - **Hence, statement 1 is correct.**
- **Factory farming:**
  - Factory farming is a modern and highly intensive system of livestock rearing practiced mostly in developed countries like those in Western Europe and North America.
  - It involves raising poultry and cattle in stalls and pens, feeding them with manufactured feed, and ensuring strict disease control through veterinary supervision.
  - It requires high capital investment in infrastructure, feed, lighting, heating, and veterinary services.
  - Emphasis is also laid on scientific breeding and breed selection for productivity.
  - **Hence, statement 2 is correct.**

Q 41.B

- **Context: The campaign marks the 10th anniversary of International Day of Women and Girls in Science & highlights positive impact of diverse perspectives by using hashtag #EveryVoiceInScience.**
- **Imagine a world with more women in science**
  - To mark the 10-year anniversary of the International Day of Women and Girls in Science, UNESCO launches the campaign "Imagine a world with more women in science" on 11 February 2025, supported by Canada's International Development Centre (IDRC).
  - This campaign demonstrates the essential role women play in driving progress in science and calls on the global community to not only envision, but also work towards, a more gender-balanced scientific community where every voice is heard.
  - UNGA has in 2015 declared 11th February as International Day of Women and Girls in Science.
- **Gender Gap in Science Global:**
  - Low Representation: Women make up only one-third of the global scientific community. Leadership Gap: Just 1 in 10 STEM leadership roles are held by women.
  - India: Women constitute 43% enrolment in STEMM (Science, Technology, Engineering, Mathematics & Medicine). The number of women scientists is 18.6%, R&D projects run by Women are ~25%.
  - Challenges Social & Cultural Norms (restrictive gender roles), Lack of role models (few visible female leaders in science limits aspirations), workplace inequality (biased work cultures) etc
- **Hence option (b) is the correct answer.**

Q 42.A

- **Crude petroleum:**
  - Crude petroleum, often referred to as "black gold", **is primarily found in sedimentary rocks formed during the Tertiary period.**
  - It forms from the remains of zooplankton and algae, buried under sedimentary layers and subjected to intense heat and pressure over geological time.
  - **Hence, statement 1 is correct.**
- **Shale gas :**
  - Shale gas is a natural gas found in **low-permeability shale rocks,** unlike conventional gas found in permeable rocks.
  - **Its extraction involves hydraulic fracturing (fracking)** using a mixture of pressurized water, chemicals, and sand to break the rock and release gas.
  - Each fracking operation can use 5 to 9 million litres of water, leading to concerns over water depletion and pollution from flowback water.
  - Hence, statement 2 is correct.
- **The majority of the world's proven oil reserves are located in the Middle East,** particularly in the Arabian-Iranian sedimentary basin.
  - North America, including Canada and the USA, holds less than 15% of the world's proven oil reserves. **Hence, statement 3 is not correct.**

Q 43.A

- **Context: Scientists at the Physical Research Laboratory (PRL) discovered a new dense exoplanet using the PARAS-2 Spectrograph at Mt Abu Telescope.**
  - PARAS-2 is a state-of-the-art high-resolution fibre-fed spectrograph that operates in 380-690 nm wave-band, aimed to unveil the super-Earth-like worlds. The spectrograph works at a resolution of ~107,000, making it the highest-resolution spectrograph in Asia to date, which is under ultra-stable temperature and pressure environment
  - A spectrograph is an instrument that disperses light into its spectrum for analysis of its composition and properties.
  - It is the highest-resolution spectrograph in Asia with high precision and sensitivity.
- **Hence option (a) is the correct answer.**

Q 44.C

- **Rectangular pattern**: Such patterns of rural settlements are **found in plain areas or wide intermontane valleys.** The roads are rectangular and cut each other at right angles. **Hence, statement 1 is correct.**
- **T-shaped, Y-shaped, Cross-shaped, or cruciform settlements:** T-shaped settlements develop at tri junctions of the roads while Y-shaped settlements emerge as the places where two roads converge on the third one and houses are built along these roads. **Cruciform settlements develop on the crossroads and houses extend in all four directions. Hence, statement 2 is correct.**

Q 45.C

- **Context: Income tax authorities can issue reassessment notices under General Anti Avoidance Rules (GAAR) under the proposed Income Tax Bill, 2025.**
  - GAAR refers to a regulatory scheme under the Income Tax Act created to mitigate aggressive tax evasion techniques. It functions as a shield preventing individuals or companies from using legal gaps to dodge paying their just proportion of taxes. This framework targets transactions or business arrangements specifically structured with the primary intent of tax avoidance.
  - GAAR was formally introduced in India on the 1st of April, 2017. This occurred approximately eight years following its initial suggestion in the Bill about the Direct Taxes Code (DTC) in 2009. India's adoption of GAAR came after the Vodafone deal involving Hutchison-Essar, which transpired in the Cayman Islands.
  - GAAR applicability in India is across a spectrum of arrangements and transactions. Any scheme categorised as an Impermissible Avoidance Arrangement (IAA) falls under GAAR's scrutiny. It signals relevance in identifying and curbing tax avoidance practices. Moreover, GAAR targets transactions lacking genuine commercial substance, ensuring that tax planning strategies align with legitimate business purposes. This broad applicability extends beyond international dealings to encompass domestic arrangements as well.
- **Hence option (c) is the correct answer.**

Q 46.B

- **Political instability:** Wars, persecution, and unstable governments force people to migrate. Example: Syrian refugee crisis. **Hence, statement 2 is correct.**
- **Natural calamities:** Earthquakes, floods, and droughts push people to leave their native places. Example: Migration from coastal regions due to rising sea levels. **Hence, statement 3 is correct.**
- **Harsh climatic conditions:** Extreme temperatures, water scarcity, and desertification make living conditions unbearable. Example: Migration from Sub-Saharan Africa due to desert expansion. **Hence, statement 4 is correct.**
- **Economic opportunities:** This is a pull factor, attracting people to better job markets. Example: Migration to the USA for jobs. **Hence, statement 1 is not correct.**
- **Better healthcare facilities:** This is also a pull factor, drawing people to regions with superior medical services. Example: Medical migration to developed nations. **Hence, statement 5 is not correct.**

Q 47.B

- An urban agglomeration may consist of any one of the following three combinations:
  - a town and its adjoining urban outgrowths.
  - two or more contiguous towns with or without their outgrowths.
  - a city and one or more adjoining towns with their outgrowths together forming a contiguous spread.
- As per census 2011, more than 60 percent of the urban population in India lives in Class I towns. Out of 46 cities, 53 cities/ urban agglomerations are metropolitan cities. Six of them are mega cities with population over five million each. More than one-fifth (21.0%) of uthe rban population lives in these megacities. Among them, Greater Mumbai is the largest agglomeration with 18.4 million people. Delhi, Kolkata, Chennai, Bengaluru, and Hyderabad are other mega cities in the country.
- High population density leads to urban sprawl, contributing to urban agglomeration. **Hence, statement 1 is correct.**
- Improved transport networks encourage suburban expansion and urban merging. **Hence, statement 2 is correct.**
- Agricultural land within the city often prevents agglomeration, as it acts as a barrier to urban expansion. **Hence, statement 3 is not correct.**

Q 48.C

- **Crude oil:**
  - Crude oil is a naturally occurring fossil fuel composed of hydrocarbon deposits and organic materials. It is classified into two main types based on sulfur content: Sweet Crude and Sour Crude.
    - **Sulfur Content and Refining:**
      - ✓ Crude oil is considered sweet if it contains less than 0.5% sulfur, making it easier and less expensive to refine. On the other hand, **sour crude has a higher sulfur content, making it more difficult and costly to process as sulfur must be removed before refining. Hence, Statement 1 is correct.**
    - **Quality of Gasoline Yield:**
      - ✓ Sweet crude oil is preferred for refining because it requires less processing and yields higher-quality gasoline and larger quantities of it. In contrast, sour crude needs desulfurization before refining, making the process complex and less efficient. **Hence, Statement 2 is incorrect.**
    - **Major Producers of Sour Crude:**
      - ✓ **Venezuela is a leading producer of sour crude oil,** while Iraq and the Appalachian Basin in North America are known for producing sweet crude. **Hence, Statement 3 is correct.**

Q 49.A

- Coffee is a tropical plantation crop. Its seeds are roasted, and ground and are used for preparing a beverage. There are three varieties of coffee i.e. arabica, robusta and liberica.
- **Coffee is cultivated in the highlands of Western Ghats in Karnataka, Kerala, and Tamil Nadu. Karnataka alone accounts for more than two-thirds of the total production of coffee in the country. Hence, statement 1 is correct.**
- Coffee is largely produced in the southern part of India. Karnataka is the largest producer accounting for about 70% of the total coffee production in India. Kerala is the second-largest producer of coffee but lags far behind, accounting only for about 23% of the total production. Tamil Nadu is the third-largest producer, where India's 6% of the coffee is produced. Nearly half of Tamil Nadu's coffee is made in the Nilgiri district, a major Arabica growing region. Orissa and the northeastern areas have a smaller proportion of production.
- There are three varieties of coffee i.e. arabica, robusta, and liberica. India mostly grows superior quality coffee, arabica, which is in great demand in the International market. Indian coffee is one of the best. coffees in the world due to its high quality and gets a high premium in the international markets. India produces two types of coffee: Arabica and Robusta. Arabica has high market value than Robusta coffee due to its mild aromatic flavor. **Robusta coffee is mainly used in making various blends due to its strong flavor. Robusta is the majorly manufactured coffee with a share of 72% of the total production. The industry provides direct employment to more than 2 million people in India. Since coffee is mainly an export commodity for India, domestic demand and consumption do not drastically impact the prices of coffee. Hence, statement 2 is correct.**

Q 50.B

- I**ron and Steel Industry:**
  - The iron and steel industry forms the base of all other industries and, therefore, is called a basic industry. It is basic because it provides the raw materials for other industries such as machine tools used for further production. It may also be called a heavy industry because it uses large quantities of bulky raw materials and its products are also heavy.
- **Distribution:**
  - The industry is one of the most complex and capital-intensive industries and is concentrated in the advanced countries of North America, Europe, and Asia.
  - In the U.S.A, most of the production comes from the northern Appalachian region (Pittsburgh), Great Lake region (Chicago-Gary, Erie, Cleveland, Lorain, Buffalo, and Duluth), and the Atlantic Coast (Sparrows Point and Morrisville).
  - **The industry has also moved towards the southern state of Alabama. Pittsburg area is now losing ground. It has now become the "rust bowl" of the U.S.A. Hence pair 2 is not correctly matched.**
  - In Europe, the U.K., Germany, France, Belgium, Luxembourg, the Netherlands, and Russia are the leading producers. The important steel centers are Scun Thorpe, Port Talbot, Birmingham, and **Sheffield in the U.K.**; Duisburg, Dortmund, Dusseldorf, and Essen in Germany; Le Creusot and St. Ettienne in France; and Moscow, St. Petersburgh, Lipetsk, Tula, in Russia and Kryvyi Rih, and Donetsk in Ukraine. **Hence pair 1 is correctly matched.**
  - In Asia, the important centers include Nagasaki and Tokyo-Yokohama in Japan; Shanghai, **Tienstin, and Wuhan in China**; and Jamshedpur, Kulti-Burnpur, Durgapur, Rourkela, Bhilai, Bokaro, Salem, Visakhapatnam and Bhadravati in India. **Hence pair 3 is correctly matched.**

Q 51.A

- Nuclear energy has emerged as a viable source in recent times. Important minerals used for the generation of nuclear energy are uranium and thorium. Today uranium is the only fuel supplied for nuclear reactors. However, thorium can also be utilized as a fuel for CANDU (CANada Deuterium Uranium) reactors or in reactors specially designed for this purpose.
- **Thorium is about 3.5 times more common than uranium in the Earth's crust. Hence, statement 1 is not correct.**
- Present knowledge of the distribution of thorium resources is poor because of the relatively low-key exploration efforts arising out of insignificant demand.
- **India has relatively modest reserves of uranium. India's uranium resources are modest, with 102,600 tonnes of U (tU) as reasonably assured resources (RAR) and 37,200 tonnes as inferred resources in situ in January 2011. However, the Department of Atomic Energy claims to have reserves of 1, 86, 653 tU in 2013. Andhra Pradesh followed by Jharkhand and Meghalaya in that order is the top state with the largest uranium reserves. Hence, statement 2 is correct.**
- **India possesses relatively modest reserves of uranium, totaling 102,600 tonnes (tU), whereas its thorium reserves, estimated at approximately 300,000 tonnes, are significant. Hence, statement 3 is not correct.**

Q 52.A

- **About Lithium:**
  - It is a chemical element with the symbol Li and atomic number 3.
  - It is a soft, silvery-white alkali metal. Under standard conditions, it is the lightest metal and the lightest solid element.
  - Like all alkali metals, lithium is highly reactive and flammable and must be stored in mineral oil. Lithium is a key component of batteries and other electronics that are becoming increasingly common around the world – particularly in the case of rechargeable lithium-ion batteries used in electric-vehicle manufacturing, as well as larger-scale battery storage.
  - According to the US Geological Survey (USGS), there are around 80 million tonnes of identified reserves globally as of 2019. **Bolivia is home to the world's biggest lithium reserves,** one-third of the "**lithium triangle" in South America** – which also comprises second and third-placed Argentina and Chile. **Hence statement 1 is correct.**
  - Although the US has the world's fourth-largest lithium reserves, measured at 6.8 million tonnes according to the US Geological Survey, production activity in the country is minimal.
  - Australia may only rank fifth on the list of largest overall reserves with 6.3 million tonnes, but it was by far the world's biggest lithium producer in 2019.

- **China is sixth-placed on the list, with overall lithium reserves estimated at 4.5 million tonnes. In 2019, the country produced 7,500 tonnes of metal – the third-highest level worldwide. Hence statement 2 is not correct.**
- India currently imports all its lithium needs. But recent surveys by the Atomic Minerals Directorate for Exploration and Research (AMD) have shown the presence of lithium resources in Mandya district, Karnataka.

Q 53.C

- Distribution **of Minerals in India:**
  - **Most of the metallic minerals in India occur in the peninsular plateau region in the old crystalline rocks. Hence statement 1 is correct.**
  - **Over 97 percent of coal reserves occur in the valleys of Damodar, Sone, Mahanadi, and Godavari.Hence statement 2 is correct.**
  - Petroleum reserves are located in the sedimentary basins of Assam, Gujarat, and Mumbai High i.e. off-shore region in the Arabian Sea.
  - New reserves have been located in the Krishna-Godavari and Kaveri basins.
  - Most of the major mineral resources occur to the east of a line linking Mangaluru and Kanpur. o Minerals are generally concentrated in three broad belts in India. There may be some sporadic occurrences here and there in isolated pockets. These belts are
    - The North-Eastern Plateau Region
    - The South-Western Plateau Region
    - The North-Western Region

Q 54.C

- **The decades 1951-1981 are referred to as the period of population explosion in India, which was caused by a rapid fall in the mortality rate but a high fertility rate of population in the country**. The average annual growth rate was as high as 2.2 per cent.
- It is in this period, after the Independence, that **developmental activities were introduced through a centralised planning process and economy started showing up** ensuring the improvement of living condition of people at large. Consequently, there was a high natural increase and h**igher growth rate.** Besides, increased international migration bringing in Tibetans, Bangladeshis, Nepalies and even people from Pakistan contributed to the high growth rate. **Hence option (c) is the correct answer.**

Q 55.A

- **Minerals** are naturally occurring inorganic substances that have a definite chemical composition and physical properties. They are formed by geological processes over millions of years and are found in rocks, soil, and water. These minerals can be broadly classified into two main categories: metallic and non-metallic minerals.
- They are usually found in "ores." The term ore is used to describe an accumulation of any mineral mixed with other elements. The mineral content of the ore must be in sufficient concentration to make its extraction commercially viable.
- The mode of occurrence of minerals refers to the way in which minerals are distributed or concentrated in the earth's crust. There are several modes of occurrence of minerals, including veins, disseminations, stratiform deposits, and placers.
  - **Copper** is a metallic mineral that is widely distributed in the earth's crust. It is commonly found in the form of sulfide and oxide minerals, such as chalcopyrite, bornite, and malachite. **Copper deposits are typically formed in igneous and metamorphic rocks minerals which occur in the cracks, crevices, faults, or joints.** The smaller occurrences are called veins and the larger are called lodes. In most cases, they are formed when minerals in liquid/molten and gaseous forms are forced upward through cavities toward the earth's surface. They cool and solidify as they rise. Copper can also occur in sedimentary rocks as a result of chemical weathering and leaching but is generally found in veins and lodes. **Hence, option 3 is not correct.**
  - **Bauxite** is a non-metallic mineral that is the primary source of aluminum. It is typically found in tropical and subtropical regions, where it is **formed through the weathering of aluminum-rich rocks such as granite and shale.** Bauxite deposits are typically formed in residual soils and are often found on hillsides and plateaus. The mineral is commonly found as a mixture of gibbsite, boehmite, and diaspore. **Hence, option 2 is not correct.**

- **Coal** is a non-metallic mineral that is formed from the remains of ancient plants and trees. **It is typically found in sedimentary rocks**, where it is formed through a process known as coalification. This process involves the transformation of plant material into coal through the application of heat and pressure over millions of years. Coal deposits are typically found in sedimentary basins, where they can occur as seams or layers of varying thicknesses. Hence, option 1 is correct.

Q 56.A

- **Context: OpenAI has ventured into protein engineering by developing a model—GPT4b micro. The model enhances Yamanaka factors.**
- **Yamanaka Factors**
  - The Yamanaka factors (Oct3/4, Sox2, Klf4, c-Myc) are a group of protein transcription factors that play a vital role in the creation of induced pluripotent stem cells (cells that have the ability to become any cell in the body), often called iPSCs. They control how DNA is copied for translation into other proteins.
  - They are sometimes referred to as (OSKM genes). In 2006, Professor Shinya Yamanaka generated iPS cells from human adult fibroblasts, and, having started with 24 transcription factors known to be important in the early embryo, he and his research team whittled that down to 4 key transcription factors – Sox2, Oct4, Klf4 and c-Myc.
  - The factors are highly expressed in embryonic stem cells, and their over-expression can induce pluripotency in human somatic cells. These factors regulate the developmental signalling network necessary for embryonic stem cell pluripotency.
- **Applications**
  - Regenerative Medicine: iPSCs generated using Yamanaka Factors can differentiate into any cell type, offering potential treatments for diseases.
  - Drug Testing: iPSCs provide a platform for testing drug efficacy and toxicity.
  - Discovery & Recognition: Identified in 2006 by Shiny
- **Hence option (b) is the correct answer.**

Q 57.A

- **Context: SWAYATT initiative on Government e-Marketplace (GeM) celebrates 6 years of transformative impact. GeM is an online platform offering end-to-end solutions for procurement of common-use goods and services by government buyers.**
- **About SWAYATT Initiative**
  - It stands for Startups, Women & Youth Advantage through e-transactions. It was launched in 2019 to enhance the market access for women entrepreneurs, youth, startups, Micro & Small Enterprises (MSEs), and Self-Help Groups (SHGs).
  - SWAYATT is portal's commitment to enhance ease of doing business and establish direct market linkages to annual public procurement for startups, women entrepreneurs, Micro & Small Enterprises (MSEs), Self Help Groups (SHGs) and youth, especially those from backward sections of the society. Since inception, the initiative is focused at facilitating the training and onboarding of last-mile sellers, developing women entrepreneurship and encouraging participation and small-scale businesses in government procurement.
- **Hence option (a) is the correct answer.**

Q 58.B

- **Conventional energy sources** are those that have been traditionally used for a long time. These include fossil fuels such as coal, petroleum, natural gas, and biomass like firewood. They are non-renewable, formed over millions of years, and are exhaustible. In contrast, non-conventional (renewable) energy sources are continuously replenished and more environmentally friendly.
  - Energy Sources:
    - > **Natural Gas**
      - ✓ Natural gas is a conventional source of energy.
      - ✓ It is a fossil fuel, formed deep beneath the Earth's surface, and is non-renewable.
      - ✓ Though it is cleaner than coal or oil, its reserves are limited.
      - ✓ **Hence, option 1 is correct.**
    - > **Firewood**

- ✓ Firewood, derived from cutting trees for fuel, is also a conventional source of energy.
- ✓ It has been used for cooking and heating for centuries, especially in rural areas.
- ✓ Since it depends on forest cover, which is not always replenished, it is considered non-renewable and conventional.
- ✓ **Hence, option 2 is correct.**

> **Wind**

- ✓ Wind energy is a non-conventional energy source.
- ✓ It is renewable, sustainable, and environmentally friendly, generated using wind turbines.
- ✓ **Hence, option 3 is not correct.**

> **Solar Power**

- ✓ Solar energy is a non-conventional and renewable energy source.
- ✓ It is freely available, sustainable, and non-polluting.
- ✓ **Hence, option 4 is not correct.**

Q 59.A

- With a long coastline of 7,516.6 km, India is dotted with 12 major and 200 notified nonmajors (minor/intermediate) ports. These major ports handle 95 percent of India's foreign trade.
- **Kandla in Kuchchh in Gujarat was the first port developed soon after Independence. It is also known as the Deendayal Port.** Located on the Gulf of Kutch, it is one of major ports on west coast. Kandla was constructed in the 1950s as the chief seaport serving western India. After the partition of India from Pakistan, it left the port of Karachi in Pakistan.
- **Marmagao port in Goa is the premier iron ore exporting port of the country.**
- **Paradip port located in Odisha, specializes in the export of iron ore.** Late Biju Patnaik, the then Chief Minister of Odisha, is the founding father of Paradip Port. It is the only Major Port in the State of Odisha situated 210 nautical miles south of Kolkata and 260 nautical miles north of Visakhapatnam on the east coast on the shore of the Bay of Bengal. **Hence, option (a) is the correct answer.**

Q 60.A

- Coal is a combustible black or brownish-black sedimentary rock with a high amount of carbon and hydrocarbons. Coal is classified as a nonrenewable energy source because it takes millions of years to form.
  - **Anthracite Coal:**
    - > **Anthracite is a hard, compact variety of mineral coal that has a high luster. It has the highest carbon content, the fewest impurities, and the highest calorific content of all types of coal. Hence, statement 1 is correct.**
    - > The carbon content is between 92.1% and 98%. It is used mainly in power generation and the metallurgy sector. Anthracite accounts for about 1% of global coal reserves and is mined in only a few countries around the world.
    - > China accounts for the majority of global production; other producers are Russia, Ukraine, North Korea, Vietnam, the UK, Australia, and the US.
  - **Bituminous Coal:**
    - > Bituminous coal or black coal is relatively soft coal containing a tar-like substance called bitumen.
    - > **It is of higher quality than lignite coal but of poorer quality than anthracite.**
    - > The carbon content of bituminous coal is around 60-80%; the rest is composed of water, air, hydrogen, and sulfur. **Hence, statement 2 is not correct.**

Q 61.A

- **Our Common Future, also known as the Brundtland Report,** was published in October 1987 **by the United Nations**. This publication was in recognition of Gro Harlem Brundtland, former Norwegian Prime Minister and Chair of the World Commission on Environment and Development (WCED). **Hence option (a) is the correct answer.**
- **Its targets were multilateralism and interdependence of nations in the search for a sustainable development path**. The report sought to recapture the spirit of the Stockholm Conference which had introduced environmental concerns to the formal political development sphere. Our Common Future placed environmental issues firmly on the political agenda; it aimed to discuss the environment and development as one single issue.

Q 62.C

- The agro-climatic classification is a climate classification keeping in view the suitability for agriculture.
- **National commission on agriculture (1971) classified the country into 127 agro-climatic zones. Hence, statement 1 is correct.**
- **The planning commission, as a result of mid. term appraisal of planning targets of VII plan (1985 - 90) divided the country into 15 broad agro-climatic zones based on physiographic and climate. Hence, statement 2 is correct.**

Q 63.A

- Steel:
  - South Africa has long been the largest steel producer in Africa, supported by its abundant iron ore and coal reserves.
  - Key production centers like ArcelorMittal South Africa make it the dominant player on the continent.
  - It is produced both for domestic consumption and export to neighboring African nations.
  - **Hence, statement 1 is correct.**
- Coal:
  - Coal is one of the most mined and widely distributed fossil fuels, with proven reserves in over 100 countries.
  - **The United States holds the world's largest proven recoverable coal reserves,** totaling nearly 248.9 billion metric tons as of 2020. **Hence, statement 2 is correct.**
  - Other major reserve holders include Russia, China, Australia, and India.
  - While China is the largest coal producer and consumer globally, it is not the top exporter.
  - The top coal-exporting countries are Indonesia and Australia. **Hence statement 3 is not correct.**

Q 64.D

- **Context: Recently, the Indian Prime Minister gifted Dokra art pieces to French President.**
  - Dhokra is a form of ancient bell metal craft practiced by the Ojha metal smiths living in states like Jharkhand, Chhattisgarh, Odisha, West Bengal and Telangana. However, the style and also the workmanship of this artisan community varies in different states. Dhokra or Dokra, is also known as bell metal craft.
  - The process - There are two main processes of lost wax casting: solid casting and hollow casting.
  - While the former is predominant in the south of India the later is more common in Central and Eastern India. Solid casting does not use a clay core but instead a solid piece of wax to create the mould; hollow casting is the more traditional method and uses the clay core.
  - This art is said to be the first of its kind to use a non-ferrous metal like copper and its alloys – brass (a mix of zinc and copper) or bronze (tin and copper) which do not contain iron. **Hence both statements 1 is not correct.**
  - The Dokra artifacts are made in brass and are unique in that the pieces do not have any joints. The method is combining metallurgical skills with wax techniques employing the lost wax technique, a unique form where mould is used only once and broken, making this art the only one-of-its-kind in the world. **Hence statement 2 is not correct.**

Q 65.C

- **Crop Cultivation in Equatorial Regions**
  - **Natural rubber** was first discovered in the Amazon basin; it has since been transplanted to other parts of the equatorial lands and is grown very profitably on large estates. Malaysia and Indonesia are the leading producers, each accounting for more than a third of the world's production. The home country, Brazil, exports practically no natural rubber.
  - **Cocoa** is most extensively cultivated in West Africa, bordering the Gulf of Guinea. The two most important producers are Ghana and Nigeria. All the cocoa here goes into the American and European chocolate industries.
  - **Oil palm** is another important crop. Large areas of tropical forests and other ecosystems with high conservation values have been cleared to make room for vast monoculture oil palm plantations. Around 90% of the world's oil palm trees are grown on a few islands in Malaysia and Indonesia – islands with the most biodiverse tropical forests found on Earth.
  - **Other crops that have been found suitable for the hot, wet equatorial climate and are extensively cultivated include coconuts, sugar, coffee, tea, tobacco, spices, cinchona, bananas, pineapples, and sago.**
- **Hence option (c) is the correct answer.**

Q 66.B

- **Recently, many countries, tech companies, and international organizations have partnered to establish Coalition for Environmentally Sustainable AI.**
- Coalition for Environmentally Sustainable AI aims to ramp up global momentum to place AI on a more environmentally sustainable path. Initiated by France in collaboration with UN Environment Programme (UNEP) & International Telecommunication Union (ITU). India is a founding member. **Hence statement 1 is not correct but statement 2 is correc**t.
- Over 100 partners, including 37 tech companies, eleven countries and five international organizations, have joined forces under the Coalition for Environmentally Sustainable Artificial Intelligence (AI), aiming to ramp up global momentum to place AI on a more environmentally sustainable path. **Hence statement 3 is correct.**
- The Coalition will encourage AI initiatives for the planet, including its role in decarbonizing economies, reducing pollution, preserving biodiversity, protecting the oceans, and ensuring humanity operates within planetary boundaries. It will use a collaborative approach – **bringing together governments, academia, civil society, and the private secto**r – to focus on standardized methods and metrics for measuring AI's environmental impacts, comprehensive life cycle analysis frameworks for reporting and disclosure, and prioritization of research on sustainable AI.

Q 67.C

- A recent report said that India will likely miss its 2022 target of installing 100 gigawatts (GW) of solar power capacity. As of April 2022, only about 50% of the 100GW target, consisting of 60GW of utility-scale and 40GW of rooftop solar capacity, has been met.
- **Since 2011, India's solar sector has grown at a compounded annual growth rate (CAGR) of around 59% from 0.5GW in 2011 to 55GW in 2021. Hence, statement 2 is correct.**
- **India currently ranks fifth in terms of installed solar power capacity. Hence, statement 1 is correct.**
- Causes for lag:
  - The disruption in supply chains due to the pandemic.
  - Limits to net-metering (or paying users who give back surplus electricity to the grid).
  - Taxes on imported cells and modules, etc.
- Key recommendations:
  - Consistent regulations for net metering and banking facilities to apply nationally,
  - Stricter enforcement of the renewable purchase obligation (RPO) by states,
  - A capital subsidy for battery energy storage systems (BESS), etc.
- **India has set a target of achieving a total installed capacity of 100GW by 2022 and 300GW by 2030 under the Jawaharlal Nehru National Solar Mission/National Solar Mission (launched in 2010). Hence, statement 3 is correct.**

Q 68.A

- **Context: A first-of-its-kind discovery of a petrified wood fossil has been made at Rajmahal hills in Pakur, Jharkhand.**
- **About Petrification (or Petrifaction)**
  - It is a process of permineralization when the organic matter is completely replaced by minerals and the fossil is turned to stone. Permineralization is a type of fossil where pores of the plant materials, bones, and shells are impregnated by mineral matter from the ground, lakes, or ocean. It reproduces the original tissue in every detail. This kind of fossilization occurs in both hard and soft tissues.
- **Hence option (a) is the correct answer.**

Q 69.C

- **Mediterranean Agriculture:**
  - Mediterranean Agriculture refers to the agricultural practices found in regions with a Mediterranean type of climate, characterized by mild, wet winters and hot, dry summers. **Although named after the Mediterranean Sea, this type of agriculture is also practiced in five major world regions: parts of California, central Chile, the Western Cape of South Africa, and southwestern Australia — apart from the Mediterranean basin itself. Hence statement 3 is not correct.**
  - This form of agriculture is unique due to its combination of crop farming and animal husbandry and is influenced largely by climate, topography, and proximity to large water bodies. It includes both subsistence and commercial farming, with high levels of crop specialization and intensive farming practices.

- **Key Features:**
  - **Orchard farming** is a major component, with the world's supply of citrus fruits, **olives, and figs coming primarily from this region**. These crops are cultivated mostly for export, and fruit culture has long been a traditional Mediterranean occupation due to the favorable climate. **Hence statement 2 is correct.**
  - **Viticulture (grape cultivation)** is a specialty of the Mediterranean region. It is an intensive form of agriculture requiring ideal moisture, temperature, and soil conditions, along with skilled care for producing high-quality grapes. **Hence statement 1 is correct..**
  - A**dditionally, vegetables and fruits are often grown in winter due to the region's mild climate and sunny conditions,** enabling multiple harvests throughout the year. **Hence statement 4 is correct.**.
  - The Mediterranean lands are also known as 'orchard lands of the world' due to their dominance in fruit and olive production.

Q 70.B

- **Rihand Dam:** It also known as Govind Ballabh Pant Sagar, is the largest dam in India by volume. The reservoir of Rihand Dam is called Govind Ballabh Pant Sagar and is India's largest artificial lake. Rihand Dam is a concrete gravity dam located at Pipri in Sonbhadra District in Uttar Pradesh, India. Its reservoir area is on the border of Madhya Pradesh and Uttar Pradesh. It is located on the Rihand River, a tributary of the Son River. The catchment area of this dam extends over Uttar Pradesh, Madhya Pradesh & Chhattisgarh whereas it supplies irrigation water in Bihar located downstream of the river. **Hence, pair 1 is not correctly matched**
- **Mettur Dam**: It is a 1700 m long dam, across the river Kaveri was constructed in the year 1934. It provides irrigation facilities for 2.75 lakh acres of farmland in parts of Salem, the length of Erode, Namakkal, Karur, Tiruchirappalli, and Thanjavur districts. **Hence, pair 3 is correctly matched**
- **Salal power station** : It is a run-of-the-river scheme with an installed capacity of 690 MW (Stage-I of 3 x115 MW & Stage-II 3 X 115 MW) to harness the Hydropower potential of river Chenab. It is located in the Reasi district of the Union Territory of Jammu & Kashmir. **Hence, pair 2 is correctly matched**.

Q 71.C

- **The North Atlantic Sea Route:**
  - **The North Atlantic Sea Route** links Northeastern U.S.A. with Northwestern Europe, which are two of the most industrially developed and economically active regions in the world.
  - This route handles nearly one-fourth of the world's foreign trade and is regarded as the busiest sea route globally.
  - Because of its massive volume of trade and economic importance, it is often referred to as the Big Trunk Route.
  - **Hence, statement 1 is correct.**
- **The Panama Canal:**
  - The Panama Canal is a man-made 80 km long waterway that **connects the Atlantic Ocean (via the Caribbean Sea) to the Pacific Ocean** at one of the narrowest parts of the American continent.
  - It plays a critical role in international maritime trade by significantly reducing travel time and shipping costs between the two oceans.
  - Since 1999, it has been managed by the Panama Canal Authority, following the Torrijos-Carter Treaties.
  - **Hence, statement 2 is correct.**

Q 72.C

- Mica is a mineral of strategic importance because of its perfect cleavage, flexibility, infusibility, high heat and electrical insulation and high dielectric strength, a combination of qualities not possessed by any other natural material.
- The chief demand for mica comes from the electrical industry, while in powder form after grinding to a suitable size, it is also used as a 'filler in various industries.
- **In 2015 mica has been declared as a minor mineral**. **Hence statement 1 is correct.**
- India is one of the important sources of sheet (block) mica producing between 70 and 80% of the total block mica output of the world.
- The splitting of mica is done by hand.
- The mica industry of the country depends largely on the export market, the domestic consumption being small.

- Commercially, two varieties of mica are important—
  - Muscovite or potash mica and phlogopite or magnesian mica.
  - Granitic pegmatites are the source of the muscovite sheet.
  - Phlogopite is found in areas of metamorphosed sedimentary rocks into which pegmatite rich granite rocks have been intruded.
  - Most of the deposits in India produce the muscovite variety, phlogopite is available in comparatively small quantities from a few places mainly in Travancore. **Hence statement 3 is correct.**
  - Both the varieties are used for electrical insulation, the best qualities being used for high tension electrical work.
- The most important mica-bearing pegmatites occur in Andhra Pradesh, Bihar, Jharkhand, Maharashtra, Odisha, Rajasthan and Telangana.
- Occurrences of mica pegmatites are also reported from Gujarat, Haryana, Karnataka, Kerala, Tamil Nadu and West Bengal.
- Andhra Pradesh has the highest reserve of mica and it is also the largest mica producing state of India. **Hence statement 2 is not correct.**

Q 73.C

- Shifting cultivation is a mode of farming long followed in the humid tropics of Sub-Saharan Africa, Southeast Asia, and South America. In the practice of "slash and burn", farmers would cut the native vegetation and burn it, then plant crops in the exposed, ash-fertilized soil for two or three seasons in succession.
- India has nearly 1.73 million hectares under shifting cultivation, where plots of land are cultivated temporarily and then abandoned for years so that the land becomes fertile again. An estimated 6.23 lakh families are involved in this activity, 90% of which are in the Northeast based on 2003 data.
- **It is known by different names in different parts:**
  - **It is jhumming in north-eastern states like Assam, Meghalaya, Mizoram, and Nagaland; Pamlou in Manipur, Dipa in Bastar district of Chhattisgarh, and in Andaman and Nicobar Islands.**
  - **In India, this primitive form of cultivation is called 'Bewar' or 'Dahiya' in Madhya Pradesh, 'Podu' or 'Penda' in Andhra Pradesh, 'Pama Dabi' or 'Koman' or Bringa' in Odisha, 'Kumari' in the Western Ghats, 'Valre' or 'Waltre' in South-eastern Rajasthan, 'Khil' in the Himalayan belt, 'Kuruwa' in Jharkhand, and 'Jhumming' in the North-eastern region.**
  - **Hence, option (c) is the correct answer.**

Q 74.B

- Palm oil is an edible vegetable oil derived from the mesocarp of the fruit of the oil palms. The oil is used in food manufacturing, in beauty products, and as biofuel. Palm oil accounted for about 33% of global oils produced from oil crops in 2014.
- **In the year 2021, India was the leading importer of palm oil worldwide, with an import value of about 9.6 billion U.S. dollars. Hence, statement 2 is correct.**
- The biggest producers of palm oil are Indonesia, Malaysia, Thailand, and Nigeria. Indonesia produces biodiesel primarily from palm oil.
- **Andhra Pradesh is the major Oil Palm growing State in India with a production capacity of 20 lakh tons. Andhra Pradesh (83.5 percent) along with Telangana accounts for about 97 percent of India's 278,000 tonnes of crude palm oil production. Hence, statement 1 is not correct.**

Q 75.C

- **The Rhine Waterways: The Rhine flows through Germany and the Netherlands.** It is navigable for 700 km from Rotterdam, at its mouth in the Netherlands to Basel in Switzerland. Ocean-going vessels can reach up to Cologne. The Ruhr river joins the Rhine from the east. It flows through a rich coalfield and the whole basin has become a prosperous manufacturing area.
  - This waterway is the world's most heavily used. Each year more than 20,000 ocean-going ships and 2,00,000 inland vessels exchange their cargoes**. It connects the industrial areas of Switzerland, Germany, France, Belgium, and the Netherlands with the North Atlantic Sea Route. Hence, statement 1 is correct.**
- T**he Mississippi-Ohio waterway connects the interior part of the U.S.A. with the Gulf of Mexico in the south.** Large steamers can go through this route up to Minneapolis. **Hence, statement 2 is correct.**

Q 76.C

- Methane hydrate, also known as methane clathrate, fire ice, or natural gas hydrate, is a solid, ice-like substance composed of methane molecules trapped within a crystalline lattice of water molecules. It is considered a potential future energy resource due to its vast reserves and high energy content.
- **Characteristics:**
  - **Methane hydrate is a solid, ice-like compound in which methane is trapped within a lattice of water molecules**. **Hence, statement 1 is correct.**
  - Methane hydrate appears similar to ice but is combustible because of the methane gas it contains. It is called "fire ice" due to its appearance and flammability.
  - The methane gas gets trapped in the cage-like structure of water molecules under specific environmental conditions.
  - **It occurs naturally under high-pressure and low-temperature conditions, such as in deep ocean floors and permafrost regions. Hence, statement 2 is correct.**
  - Methane hydrate is stable only under high-pressure and low-temperature conditions, which exist in deep ocean sediments, under Arctic permafrost, and beneath Antarctic ice.
  - These geological environments provide ideal conditions for the formation and stability of methane hydrate.
  - It has been discovered in the continental margins, deep-sea sediments, and in onshore permafrost regions such as northern Canada and Russia.

Q 77.B

- From the 1950s to the 1970s, a series of land reform laws were passed – at the national level as well as in the states – that were intended to bring reform in the agrarian structure, especially in the landholding system and the distribution of land.
- **The first important legislation was the abolition of the zamindari system, which removed the layer of intermediaries who stood between the cultivators and the state. Of all the land reform laws that were passed, this was probably the most effective, for in most areas it succeeded in taking away the superior rights of the zamindars over the land and weakening their economic and political power. Hence, statement 1 is correct.**
- **Among the other major land reform laws that were introduced were the tenancy abolition and regulation acts. They attempted either to outlaw tenancy altogether or to regulate rents to give some security to the tenants. Hence, statement 3 is correct.**
- The third major category of land reform laws was the Land Ceiling Acts. These laws imposed an upper limit on the amount of land that can be owned by a particular family. The ceiling varies from region to region, depending on the kind of land, its productivity, and other such factors. Very productive land has a low ceiling while unproductive dry land has a higher ceiling limit. According to these acts, the state is supposed to identify and take possession of surplus land (above the ceiling limit) held by each household and redistribute it to landless families and households in other specified categories, such as SCs and STs.
- **The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (also Land Acquisition Act, 2013) was passed to regulate the land acquisition process and lay down the procedure and rules for granting compensation, rehabilitation, and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects, and assures rehabilitation of those affected. Hence, statement 2 is not correct.**

Q 78.D

- The current population of the world is nearing 8 billion. It has grown to this size over centuries. In the early periods' population of the world grew very slowly. It is only during the last few hundred years that the world population has increased at an alarming rate.
- After the evolution and introduction of agriculture, the population began to grow slowly but steadily. Around 1750, at the dawn of the Industrial Revolution, the world population was 550 million.
- The world population exploded in the eighteenth century after the Industrial Revolution. Technological advancement achieved so far helped in the reduction of the birth rate and provided a stage for accelerated population growth.
- **As a consequence, the world population reached 1 billion in the early 19th century (1804). Thus, it took millions of years for the human population to reach the 1 billion mark. In contrast, it took only 12 years for the world population to reach 7 billion from 6 billion. Hence, statement 1 is correct**

- The growth rates of the continents of the world are:
  - Africa: 2.49 %
  - Oceania: 1.31% (Australia, New Zealand, and other island nations)
  - Asia: 0.86%
  - South America: 0.83%
  - North America: 0.77%
  - Europe: 0.06%
- At 2.49 percent, Africa has the highest growth rate of population among all the continents. **Hence, statement 2 is correct.**
- Asia continues to be the most populous continent, housing over 4.7 billion people (more than 50% of the world's population). **Hence, statement 3 is correct.**

Q 79.A

- A super-aged society is defined as a country where more than 20% of the population is aged 65 and above. This leads to several economic and social challenges, including a shrinking workforce, increased dependency ratio, rising healthcare costs, and pension burdens.
- Japan, Italy, and Germany have already crossed the 20% threshold of people aged 65 and above, classifying them as super-aged societies.
- These countries face economic challenges such as labor shortages and rising healthcare expenses due to an aging population. **Hence, statement-I is correct.**
- A super-aged society is precisely defined as a country where 20% or more of the population is aged 65+.
  - Such societies face lower productivity, a higher dependency ratio, and increased social welfare costs.
  - **Statement II correctly explains the concept mentioned in Statement I.**
- **Hence, option (a) is the correct answer.**

Q 80.C

- Weight losing raw materials are materials that weigh less after getting manufactured than what should have been their weight as a raw material. For example, copper was taken from its raw material copper ore.
- Industries using weight-losing raw materials are located in the regions where raw materials are located. The sugar mills in India are located in sugarcane growing areas.
- Similarly, the locations of the pulp industry, copper smelting, and pig iron industries are located near their raw materials.
- **In the iron and steel industries, iron ore and coal both are weight-losing raw materials. Therefore Iron and Steel Industry, Pulp Industry, and Sugar mills Industry are categorized as a weight-losing raw materials-based industry.**
- Therefore, an optimum location for iron and steel industries should be near raw material sources. This is why most of the iron and steel industries are located either near coalfields (Bokaro, Durgapur, etc.) or near sources of iron ore (Bhadravati, Bhilai, and Rourkela).
- Similarly, industries based on perishable raw materials are also located close to raw material sources.
- Markets provide outlets for manufactured products. Heavy machines, machine tools, and heavy chemicals are located near the high-demand areas as these are market-orientated.
- **The cotton textile industry uses a non-weight-losing raw material and is generally located in large urban centers, e.g. Mumbai, Ahmedabad, Surat, etc. Hence, option (c) is the correct answer.**

Q 81.C

- The Trans–continental railways run across the continent and link its two ends. They were constructed for economic and political reasons to facilitate long runs in different directions.
- **The Orient Express runs from Paris to Istanbul, providing a rail link across Europe,** passing through Strasbourg, Munich, Vienna, Budapest, and Belgrade.The journey time from London to Istanbul by this Express is now reduced to 96 hours as against 10 days by sea route. The chief exports on this rail route are cheese, bacon, oats, wine, fruits, and machinery. **Hence statement 1 is correct.**
- **The Union and Pacific Railways link New York City on the Atlantic coast to San Francisco** on the Pacific coast of North America. **Hence statement 2 is correct.**

Q 82.D

- **Kandla,** now officially Deendayal Port Authority, is a seaport and town in the **Kutch district of Gujarat state** in Western India, near the city of Gandhidham. Located on the Gulf of Kutch, it is one of India's major ports on the west coast.
- **Visakhapatnam Port in Andhra Pradesh** is a land-locked harbour, connected to the sea by a channel cut through solid rock and sand. An outer harbour has been developed for handling iron ore, petroleum and general cargo. Andhra Pradesh and Telangana are the main hinterlands for this port.
- **Tuticorin Port in Tamil Nadu** was developed to relieve the pressure of Chennai port. It deals with a variety of cargo, including coal, salt, food grains, edible oils, sugar, chemicals and petroleum products.
- **New Mangalore Port** is a deep-water, all-weather port at Panambur, Mangalore in **Karnataka state in India,** which is the deepest inner harbour on the west coast. This port is operated by New Mangalore Port Trust. **Hence, option (d) is the correct answer.**

Q 83.B

- **Context: On February 2, 2025, four new sites were added to the list taking the total Ramsar sites in India to 89.**
- A Ramsar site is a wetland recognized under the Ramsar Convention, an international treaty established in 1971 in Ramsar, Iran, to promote wetland conservation and sustainable use. These sites hold global importance as they provide vital habitats for diverse species, support local livelihoods, and contribute to climate regulation by storing carbon and reducing flood risks.
- On February 2, 2025, four new sites were added to the list taking the total Ramsar sites in India to 89. The new Ramsar sites are:
  - Sakkarakottai Bird Sanctuary (Tamil Nadu)
  - Therthangal Bird Sanctuary (Tamil Nadu)
  - Khecheopalri Wetland (Sikkim)
  - Udhwa Lake (Jharkhand)
- With this, India became the country with the highest number of Ramsar sites in Asia and the third-highest globally, after the United Kingdom (176) and Mexico (144). Now, India has a total of 1308 wetlands, which includes 89 Ramsar Wetlands and 111 Significant Wetlands.
- **Hence option (b) is the correct answer.**

Q 84.A

- **Kochchi Port, situated at the head of Vembanad Kayal, popularly known as the 'Queen of the Arabian Sea', is also a natural harbor.** This port has an advantageous location being close to the Suez-Colombo route. It caters to the needs of Kerala, southern Karnataka and southwestern Tamil Nadu. **Hence, statement 1 is correct.**
- **Haldia Port is located 105 km downstream from Kolkata on the Hooghly river.** It has been constructed to reduce the congestion at Kolkata port. It handles bulk cargo like iron ore, coal, petroleum, petroleum products and fertilizers, jute, jute products, cotton and cotton yarn, etc. **Hence, statement 2 is not correct.**

Q 85.C

- The Demographic Transition Theory (DTT) explains population changes over time due to shifts in birth and death rates.
- In the first stage, both birth rates and death rates are high, leading to a stable population rather than rapid growth. This stage is seen in pre-industrial societies where diseases, famine, and poor medical facilities keep death rates high. **Hence, statement 1 is not correct.**
- In the second stage, death rates decline significantly due to medical advancements, sanitation, and better food supply, while birth rates remain high. This results in rapid population growth, not stabilization. **Hence, statement 2 is not correct.**
  - Population stabilization usually happens in later stages.
- The final stage is marked by low fertility and low mortality, sometimes resulting in population decline.
- In the final stage, both birth and death rates are low, and in some cases (like Japan, Germany), birth rates fall below replacement levels, causing population decline. **Hence, statement 3 is correct.**

Q 86.C

- **Tundra Region:**
  - The Tundra region, associated with the polar type of climate, is found mainly north of the Arctic Circle in the Northern Hemisphere. It is characterized by extreme cold, limited biological activity, and a fragile ecosystem.
- **Characteristics:**
  - **Extremely low temperatures and has a very short growing season.**
    - The greatest limiting factor in the Tundra is the deficiency of heat.
    - However, there is a brief summer during which the ice melts, and limited biological activity occurs.
    - The growing season is very short (less than three months), but not entirely absent.
    - Therefore, while the temperature is extremely low, the region does experience a short period of activity in summer.
  - **Limited vegetation:**
    - Due to permafrost (permanently frozen subsoil), drainage is poor, and no trees can grow.
    - Only lowest forms of vegetation like mosses, lichens, and sedges can survive in such conditions.
  - **Scarce Animal life:**
    - Despite harsh conditions, some mammals like reindeer, Arctic foxes, musk-oxen, and Arctic hares ave adapted to this biome.
    - In summer, migratory birds and insects are also active in the region.
- **Hence option (c) is the correct answer.**

Q 87.D

- **Collective farming or Kolkhoz farming** was introduced by the Soviet Union. **Hence statement 1 is not correct.**
- The basic principle behind this method was social ownership of means of production and collective labor.
- It was introduced to improve on the previous model of farming and improve efficiency and self-sustainability in agricultural production. In cooperative farming, wherein farmers pool their resources and ownership remains as per their share in resources so there is no social ownership. So, Kolkhoz was not about cooperative farming. **Hence statement 2 is not correct.**

Q 88.A

- Coal is a one of the important minerals which is mainly used in the generation of thermal power and smelting of iron ore. Coal occurs in rock sequences mainly of two geological ages, namely Gondwana and tertiary deposits.
- The older Gondwana formations of peninsular plateau makes up to 98% of the total reserves in India. It contains superior quality coal which is free from moisture. The most important Gondwana coal fields of India are located in Damodar Valley.
- **The coal occurrences in India are mainly distributed along the present day river valleys. Over 97 percent of coal reserves occur in the valleys of Damodar, Sone, Mahanadi and Godavari. Hence, statement 1 is correct.**
- **Jharia (Jharkhand) is the largest coal field followed by Raniganj (West Bengal). Hence statement 2 is not correct.**
- Other Major coal producing states of India are Madhya Pradesh, Odisha, Chhattisgarh, Andhra Pradesh and Telangana.
- Tertiary coals occur in Assam, Arunachal Pradesh, Meghalaya and Nagaland.
- The Brown coal or lignite occur in the coastal areas of Tamil Nadu, Puducherry, Gujarat and Jammu and Kashmir

Q 89.C

- **Ports of Call:** These are the ports which originally developed as calling points on main sea routes where ships were used to anchor for refueling, watering, and taking food items. Later on, they developed into commercial ports. Aden, Honolulu, and Singapore are good examples.
- **Packet Station:** These are also known as ferry ports. These packet stations are exclusively concerned with the transportation of passengers and mail across water bodies covering short distances. These stations occur in pairs located in such a way that they face each other across the water body, e.g. Dover in England and Calais in France across the English Channel. **Hence pair 2 is correctly matched.**

- Naval Ports: These are ports that have only strategic importance. These ports serve warships and have repair workshops for them. Kochi and Karwar are examples of such ports in India. **Hence pair 3 is correctly matched.**
- Entrepot Ports: **These are collection centers where the goods are brought from different countries for export**. Singapore is an entrepot for Asia. Rotterdam for Europe, and Copenhagen for the Baltic region. **Hence pair 1 is correctly matched.**

Q 90.A

- A double village is a type of rural settlement that is spread across both sides of a river and is typically connected by a bridge or ferry. Such settlements develop when access to water is crucial for livelihood and transportation. **Hence, option (a) is the correct answer.**
- In this village pattern nallah, stream, river act as a boundary between the two settlements. These villages occupy similar geographic conditions but their revenue and administration are dealt separately.

Q 91.B

- The Yakuts are actually native to Siberia, not the Congo Basin.
  - They are known for horse breeding, cattle herding, and adapting to harsh cold climates.
  - The Congo Basin is home to indigenous groups like the Pygmies who rely on hunting and gathering. **Hence, pair (1) is not correctly matched.**
- Samoyeds – Siberia
  - The Samoyeds are a nomadic tribe in Siberia.
  - While they are traditionally known for reindeer herding, they also engage in fishing and hunting.
  - **Hence, pair (2) is correctly matched.**
- The Tuaregs are a nomadic Berber tribe from the Sahara Desert, not Alaska.
  - They are desert traders, known for navigating vast arid regions using camels, not sleds.
  - Alaska is home to the Inuit (Eskimos), who use sleds and depend on hunting seals, whales, and fishing. **Hence, pair (3) is not correctly matched.**

Q 92.C

- The HVJ (Hazira-Vijaipur-Jagdishpur) Natural Gas Pipeline is India's first cross-state gas pipeline. The project began in1986, following the formation of the Gas Authority of India Limited (GAIL), to supply gas to fertilizer companies in Uttar Pradesh. The pipeline runs from Hazira, Gujarat through Vijaipur, Madhya Pradesh to Jagdishpur, Uttar Pradesh.
- **It passes through the states of Gujarat, Madhya Pradesh, Rajasthan, Uttar Pradesh, Haryana, and Delhi NCT. Hence, option (c) is the correct answer.**

Q 93.B

- To promote Inland Water Transport (IWT) in the country, **111 waterways (including 5 existing and 106 new) have been declared National Waterways (NWs)** under the National Waterways Act, 2016.
- **The Ganga - Bhagirathi - Hooghly river system from Allahabad to Haldia was declared National Waterway-1 (NW-1)** vide the National Waterway (Allahabad-Haldia stretch of the Ganga Bhagirathi- Hooghly river) Act 1982. The waterway extends from Haldia to Allahabad for a distance of 1620 km. **Hence statement 1 is correct.**
- **The Brahmaputra from Dhubri to Sadiya was declared National Waterway-2 (NW-2) vide the National Waterway (Sadiya-Dhubri stretch of the Brahmaputra river) Act 1988.** From Dhubri to Sadiya, the waterway extends for a distance of 891 km. The river Brahmaputra flows down the centre of the Assam Valley. It is used by tourism vessels, Border security forces, Assam government, and private vessels. **Hence statement 2 is correct.**
- **The West Coast Canal from Kottapuram to Kollam was declared National Waterway-3 (NW-3)** vide the National Waterway (Kollam-Kottapuram stretch of the West Coast Canal and Champakara and Udyogmandal Canals) Act 1992 and notified on 1st Feb. 1993. From Kottapuram to Kollam, including the Champakara and Udyogmandal canals, it has a navigable length of 205 km. This waterway comprises natural lakes, backwaters, river sections, and man-made canal sections.
  - **However, National Waterway (NW) 6**: National Waterways 6 is a waterway between Lakhipur and Bhanga of the Barak River. **Hence statement 3 is not correct.**

Q 94.B

- Major coalfields of the world are:
  - North America
    - Pennsylvania anthracite field
    - Appalachian bituminous field
    - Eastern Illinois field – Illinois, Indiana and Kentucky
    - Western interior field – Iowa, Missouri, Oklahoma
    - Gulf province – Texas, Alabama and Arkansas
    - Rocky mountain province- Utah, Colorado, Wyoming, Montana, new Mexico
    - Canada – Prairies, British Columbia coalfields, Nova Scotia Coal fields
    - The largest coal mine in the world by reserves is the **North Antelope Rochelle** coal mine in the Powder River Basin of Wyoming, US. The mine was estimated to contain more than 1.7 billion tonnes of recoverable coal as of December 2018. **Hence pair 3 is not correctly matched.**
  - Europe
    - Donetz coal basin (anthracite and high grade bituminous coal)
    - Moscow-Tula coalfields
    - Kuznetsk coal basin
    - Karaganda field
    - Silesia coal fields
    - **Ruhr area of Germany. Hence pair 1 is correctly matched.**
    - Other coal fields in Urals, Taimyr fields of the Arctic, deposits of the Caucasus mountains.
  - Asia
    - China – Shanxi, **Fushun**, Inner Mongolia, Kansu. **Hence pair 4 is not correctly matched.**
    - Japan – Chikugo coalfield, Ishikari coalfield
    - India – Damodar valley, Raniganj, Bokaro, Jharia, Singareni. Singareni is in Telangana.
    - Pakistan - Quetta, Kalabagh and Thar coalfields
  - Australia –
    - **Bowen Basin coalfield,** Galilee Basin coalfield, South Maitland coalfield, Sydney Basin coalfield, and Latrobe valley coalfield. **Hence pair 2 is correctly matched.**

Q 95.B

- Sunflower is an important oilseed crop grown in temperate countries.
  - A major source of vegetable oil in the world.
  - **India is one of the largest producers in the world.**
- **Six states with Karnataka in the lead are the major producers of sunflower in the country. Karnataka with a production of 3.04 lakh tonnes from an area of 7.94 lakh hectares followed by Andra Pradesh, Maharashtra, Bihar, Orissa, and Tamil Nadu are major sunflower producing states of India. Hence statement 3 is correct.**
- In India, cultivated over an area of 4.006 lakh ha with a production of 2.840 lakh tonnes and productivity of 709 kg/ha (Average of 2014-15 to 2018-19).
- **Sunflower's contribution to Indian oilseed production is about 3.85%. Hence statement 1 is not correct.**
- The crop requires a cool climate during germination and seedling growth. It requires warm weather from the seedling stage up to the flowering stage and warm and sunny days during flowering to maturity.
- High humidity accompanied by cloudy weather and rainfall at the time of flowering results in poor seed sets.
- **The amount of linoleic acid decreases with high temperatures at maturity.**
- **Sunflower is a photo-insensitive crop, therefore, it can be grown successfully in any season viz., Kharif, Rabi, and spring throughout India. It takes about 80-90 days in Kharif, 105-130 days in Rabi, and 100-110 days in the spring season. Hence statement 2 is correct.**

Q 96.C

- **Golden Quadrilateral**
  - It comprises the construction of a 5,846 km long 4/6 lane, high-density traffic corridor, to connect India's four big metro cities of Delhi-Mumbai-Chennai Kolkata.
  - Other cities connected by this network include Ahmedabad, Bengaluru, Baleshwar (Balasore), **Bhubaneswar**, Cuttack, Berhampur, Durgapur, **Jaipur,** Kanpur, Pune, Kolhapur, Surat, Vijayawada, Ajmer, Vizag, Bodhgaya**, Varanasi,** Allahabad, Agra, Mathura, Dhanbad, Gandhinagar, Udaipur, and Vadodara.
- **Hence option (c) is the correct answer.**

Q 97.A

- **Recent Context:** The U.S. Securities and Exchange Commission (SEC SEC has requested assistance from the Indian government under the Hague Service Convention to serve summons in a securities and wire fraud case.
- **Hague Service Convention formally known as the Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters, 1965** is a multilateral treaty that facilitates the cross-border service of legal documents in civil or commercial matters among 84 signatory states, including India (acceded to the Convention in 2006 with certain reservations) and the US. **Hence statement 1 is correct but statement 3 is not correct.**
- It establishes a standardized process for serving judicial and extrajudicial documents in civil and commercial matters across international borders. It ensures defendants in foreign jurisdictions receive timely legal notices while facilitating proof of service. **Hence statement 2 is correct.**

Q 98.A

- Population density is calculated as:
  - Population Density = Total Population / Total Land Area
- Estimated Population Density of the Continents (people per sq. km):
- North America: Approx 25 people/sq. km
- Europe: Approx 72 people/sq. km
- Asia: Approx 150 people/sq. km
- North America has the lowest population density.
- Europe comes next with a moderate population density.
- Asia has the highest population density.
- Hence, the correct order is: North America (3) → Europe (2) → Asia (1)
- **Hence, option (a) is the correct answer.**

Q 99.C

- The equatorial region consists of dense tropical rainforests found in South America, Africa, and Southeast Asia.
  - The Pygmies are an indigenous group living in the Congo Basin.
  - The Orang Asli are the indigenous people of Malaysia (Southeast Asia), many of whom live in rainforest regions.
  - The Yanomami are an indigenous tribe residing in the Amazon Rainforest (South America).
  - Since all the mentioned tribes belong to equatorial rainforest regions**. Hence, statement 1 is correct.**
- Indigenous tribes in equatorial forests often rely on hunting, gathering, and shifting cultivation (slash-and-burn farming) due to the dense vegetation and infertile soil.
  - Pygmies rely on hunting and gathering.
  - Orang Asli practice a mix of hunting, gathering, and shifting agriculture.
  - Yanomami practice slash-and-burn agriculture along with hunting and fishing. **Hence, statement 2 is correct.**

Q 100.A

- Classification of Metallic Minerals:
  - Metallic minerals are those that yield metals like iron, copper, and gold upon processing.
  - These are further classified into:
  - Ferrous minerals – contain iron (e.g., iron ore, manganese).
  - Non-ferrous minerals – do not contain iron (e.g., copper, bauxite, cobalt, aluminium).
- Non-Ferrous Metallic Minerals:
  - Copper: A classic non-ferrous base metal, used in electrical and construction industries. **Hence option 1 is correct.**
  - Bauxite: The primary ore of aluminium, a widely used non-ferrous metal. **Hence option 2 is correct.**
  - Cobalt: Categorized under specialty non-ferrous metals, used in batteries and alloys. **Hence option 4 is correct.**
- What is Not Non-Ferrous:
  - Manganese: Although a metal, it contains iron and is primarily used in steel production. Hence, it is a ferrous mineral. **Hence option 3 is not correct.**
  - Graphite: This is a non-metallic mineral, inorganic in nature, used in lubricants and batteries. It does not fall under metallic minerals. **Hence option 5 is not correct.**