

100+ Geography Questions NDA & CDS 2023

Q1. The Forchhammer's Principle is related to which of the following?

- (a) Ocean composition
- (b) Population density
- (c) Typhoon study
- (d) None

Q2. Which of the following is NOT part of Great lakes of North America?

- (a) Victoria
- (b) Ontario
- (c) Michigan
- (d) Erie

Q3. Consider the following statements

1. Coastal plains estuaries form when a shallow lagoon or bay is protected from the ocean by a sand bar, delta or island.
2. Fjord and Ria estuaries are formed by glacial action.

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

Q4. The Beaufort Gyre (Sea water current), sometimes seen in news is related to which of the following?

- (a) Arctic Ocean
- (b) Pacific Ocean
- (c) Indian Ocean
- (d) None

Q5. Consider the following statements regarding Atlantic Meridional Overturning Circulation (AMOC):

1. It is a large system of ocean currents that carry warm water from the tropics northwards into the North Atlantic.
2. Its circulation effects the location of droughts and frequency of hurricanes.

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

TEST SERIES
ENGLISH



AAI 2023
Junior Executive
ATC

50+ TOTAL TESTS

Q6. Which of the following Ocean current is called as “Black Stream”?

- (a) Gulf Stream Current
- (b) Labrador Current
- (c) Kuroshio Current
- (d) Alaska Current

Q7. Which of the following are relief features of an Ocean Basin?

- 1. Plateaux
- 2. Submarine ridges
- 3. Canyons
- 4. Sea mounts

Which of the statements given above is/are correct?

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

Q8. Consider the following statements regarding **Oceans**:

- 1. Around 50-80% of the oxygen production on Earth comes from the ocean.
- 2. The majority of this production is from oceanic plankton.

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

Q9. World’s largest dead zone is located in which of the following sea?

- (a) Black sea
- (b) Gulf of Mexico
- (c) Arabian Sea
- (d) Coral sea

Q10. Which of the following deserts is/are influenced by ocean currents?

- 1. Atacama Desert
- 2. Namib Desert
- 3. Gobi Desert

Which of the statements given above is/are correct?

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

Q11. Consider the following statements regarding Medicanes

1. Medicanes occur more in colder waters than tropical cyclones
2. Medicanes are weaker and smaller in size than tropical cyclones.
3. It is observed across the Madagascar sea

Which of the statements given above is/are correct?

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

Q12. Consider the following statements regarding PANTANAL wetland recently seen in the news due to forest fires

1. It constitutes the world's 3% of wetland area.
2. It is World's Largest Wetland and sprawls over three countries Brazil, Bolivia and Paraguay

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

Q13. Nagorno-Karabakh region was recently seen in the news .it is a disputed region between-

- (a) Syria and Isreal
- (b) Yemen and Saudi Arabia
- (c) Djibouti and South Sudan
- (d) Azerbaijan and Armenia

Q14. Consider the following statements regarding countries that touch the Caspian sea.

1. Kazakistan
2. Uzbekistan
3. Iran
4. Armenia
5. Azerbaijan

Select the correct code from below:

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

Q15. Consider the following statements regarding Tasmania:

1. It is a small island is the territory of Newzealand.
2. This area was in news due to Large Pilot Whale strandings around the coastal areas

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

Q16. Consider the following statements regarding Odisha.

1. Bonda tribe and Didayi tribe are native to Odisha and are classified as Particularly Vulnerable Tribal Groups in the state
2. Odisha has the second-highest Particularly Vulnerable Tribal Groups 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

Q17. Garo, Khasi and Jaintia Hills in the state of Meghalaya are an extension of which of the following?

- (a) The North Eastern Himalayas
- (b) The Tibetan Plateau
- (c) The Ganges Delta
- (d) The Peninsular Plateau

Q18. Consider the following statements regarding Malwa plateau

1. The western part of the region is drained by the Mahi river
2. This plateau has both, the Arabian, as well as the Bay of Bengal drainage systems.
3. It is volcanic in origin and is composed of lava flows

Which of the statements given above is/are correct?

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

Q19. Consider the following statements

1. Silica and aluminium are the major minerals in the lithosphere.
2. The barysphere is composed of iron and nickel

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

Q20. Consider the following statements regarding Mohorovicic discontinuity?

1. In this region, the speed of the earthquake waves increases abruptly.
2. It is located at the core and the mantle boundary

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

Q21. Consider the following pairs

1. Mechanically formed sedimentary rock : Sandstone
2. Organically formed sedimentary rock : Rock salt
3. Chemically formed sedimentary rock : Shale

Which of the pair/s given above is/are correct?

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

Q22. Consider the following statements regarding dharwar rock system

1. These are the oldest sedimentary rocks.
2. The Aravali mountain range has been made with these rocks.

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

Q23. Which of the following is/are the characteristics of Igneous Rocks?

1. They are hard and compact.
2. They are granular and crystalline.
3. They are more widespread and constitute about 75% of the surface area of globe.

Which of the statements given above is/are correct?

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

Q24. Which of the following rocks is NOT sedimentary rocks?

- (a) Loess
- (b) Conglomerate
- (c) Shale
- (d) All are sedimentary rocks

Q25. Which of the following mountain pass(s) is/are in the Union Territory of Ladakh?

1. Rezang La
2. Nathu La
3. Khardung La

Select the correct answer using the code given below:

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

Q26. Which of the following correctly defines the Macartney–MacDonald Line?

- (a) A proposed boundary in the area of Aksai Chin
- (b) Border between India and China in Arunachal Pradesh
- (c) Line dividing the Ireland and Northern Ireland
- (d) Border between North Korea and South Korea

Q27. Which of the following is/are correctly matched?

- 1. Kibithoo – Assam
- 2. Sumdorong Chu – Ladakh
- 3. Pasighat – Arunachal Pradesh

Select the correct answer using the code given below:

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

Q28. Which of the following country(s) border the Mediterranean Sea?

- 1. France
- 2. Austria
- 3. Spain

Select the correct answer using the code given below:

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

Q29. The plains formed by the continuous long term scouring of uplands are called as

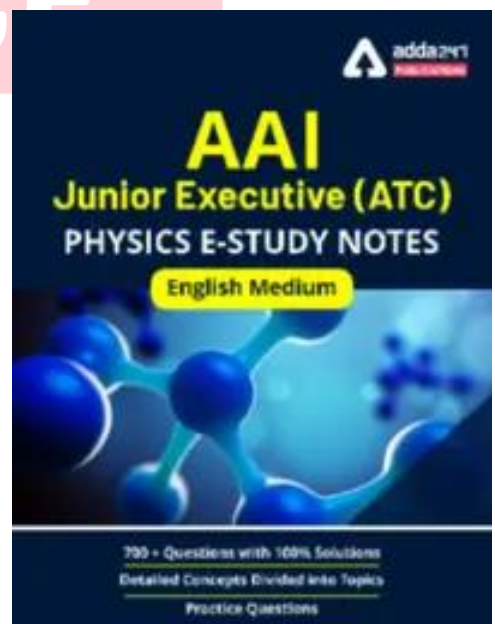
- (a) Structural plains
- (b) Erosional plains
- (c) Depositional plains:
- (d) Coastal Plains

Q30. Consider the following pairs

- 1. Scroll plain- a plain that originally formed in a lacustrine environment,
- 2. Lacustrine plain- a plain through which a river meanders with a very low gradient.

Which of the pair/s given above is/are correct?

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



Q31. Consider the following statements regarding the Ensemble forecasting:

1. It is a forecasting methodology using a single set of conditions
2. It can be used for optimization of weather forecasting.

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

Q32. Consider the following statements regarding the Tropical cyclones:

1. An eye forms in the center of the cyclone having very high air pressure.
2. Their intensity usually weakens when they make landfall.

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

Q33. Consider the following statements regarding La Nina

1. It refers to the periodic warming in sea surface temperatures across the central and east-central Equatorial Pacific.
2. La Nina correlates with heavy monsoon rains 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

Q34. Consider the following statements regarding the north-east monsoon (NEM):

1. Its onset occurs subsequent to the withdrawal of the South-west monsoon.
2. It is primary source of annual rainfall for the north-east region of 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

Q35. Which of the following statement correctly defines the Fujiwhara effect?

- (a) A tropical cyclone making landfall too far from point of origin.
- (b) An abnormal rise in sea level accompanying a hurricane or other intense storm.
- (c) Force winds impact on locations that do not experience a direct hit from a tropical cyclone
- (d) The tendency of two nearby tropical cyclones to rotate cyclonically about each other.

Q36. Which of the following clouds are patchy gray or white clouds that often have a dark honeycomb-like appearance?

- (a) Cumulus clouds
- (b) Stratocumulus clouds
- (c) Altocumulus clouds
- (d) Cirrus clouds

Q37. Which of the following cloud is also known as rain cloud?

- (a) Altocumulus
- (b) Cirrostratus
- (c) Nimbostratus
- (d) Altostratus

Q38. Which of the following are refer as the Roaring Forties, Furious Fifties and Shrieking or Stormy Sixties?

- (a) Easterlies
- (b) Westerlies
- (c) Horse latitudes
- (d) Doldrums

Q39. The major hot deserts of the world are mainly associated with which of the following?

- (a) Doldrums
- (b) Horse latitudes
- (c) Westerlies
- (d) Jet Streams

Q40. Movement of water caused by meteorological effects like winds and atmospheric pressure changes are known as?

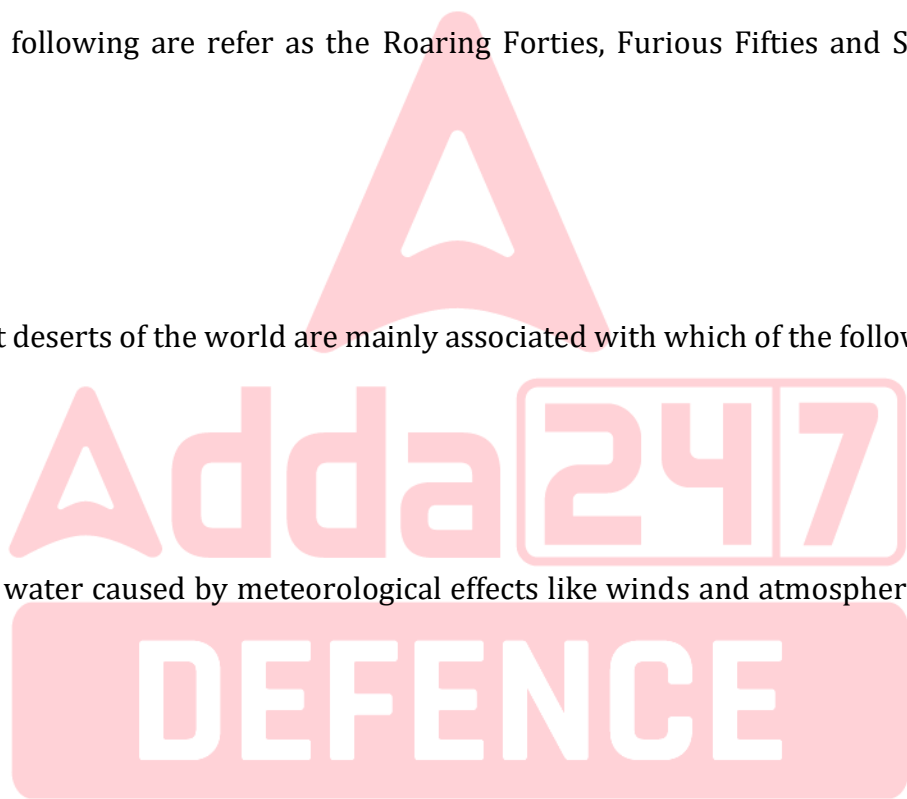
- (a) Tides
- (b) Gyres
- (c) Surges
- (d) Current

Q41. Consider the following statements

1. Coal-based thermal power plants constitute the maximum share of India's installed power generation capacity.
2. In India, the total installed capacity of Nuclear power plants is higher than Natural gas-based power plants.
3. At present Wind power constitutes the maximum share of the total installed renewable energy in India.

Which of the statements given above is/are correct?

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



Q42. Which of the following statements regarding iron ore is incorrect?

- (a) Iron ore occurs most abundantly in the form of carbonates.
- (b) Hematite is the most abundant iron ore mineral and is the main constituent of the iron ore industry in India.
- (c) The major Hematite type iron deposits are located in the States of Odisha, Jharkhand, and Chhattisgarh
- (d) All are incorrect

Q43. Consider the following statements

1. Wet-bulb temperature is used to measure both heat and humidity of a place
2. Generally, a dry heatwave is more dangerous than a humid heatwave for human beings.

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

Q44. Which of the following are the destabilizing geological processes that pose a serious threat to human habitation in the highlands of western Ghats?

1. Soil piping
2. Lateral spread
3. Land subsidence

Select the correct answer code:

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

Q45. Consider the following statements

1. Western disturbances are periodic influxes of moisture-laden clouds from the Mediterranean that are common during winter and cause rain in northern India.
2. The elevated temperatures and warmer waters in the Arctic Ocean reduce the intensity of Western disturbances over North 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

Q46. Consider the following pairs

1. Sihanoukville: Malaysia
2. Severodonetsk: Ukraine
3. Ulaanbatar: Mongolia

Which of the pair/s given above is/are correct?

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

Q47. 'Rabha' tribe seen in the news are usually found in

- (a) Odisha
- (b) Sikkim
- (c) Assam
- (d) Jharkhand

Q48. Consider the following statements regarding heatwaves

1. It is declared when the maximum temperature over the plains is 40°C or higher for five consecutive days
2. National Disaster Management Authority is the agency responsible for declaring heat waves

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

Q49. Consider the following statements

- 1. The world's biggest sugar producer is India**
2. The biggest exporter of Sugar in the world is Brazil

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

Q50. Which of the following statements regarding the Northern Limit of the monsoon is correct?

- (a) It is the imaginary line indicating the areas covered by the Southwest monsoon.
- (b) It is the imaginary line indicating the areas covered by the Northeast monsoon.
- (c) It is the northernmost extent in the Indian sub-continent to which the Monsoon winds reach.
- (d) It is the northernmost extent in the Pacific Ocean to which the Monsoon winds reach

Q51. Which of the following factors affect Indian monsoon

1. The shift of the position of Inter-Tropical Convergence Zone (ITCZ) in summer, over the Ganga plain
2. The presence of the high-pressure area, east of Madagascar, approximately at 20°S over the Indian Ocean
3. Formation of high pressure over Tibetan Plateau at about 9 Km above MSL

Which of the statements given above is/are correct?

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

Q52. Which of the following statement is incorrect regarding Jetstreams?

- (a) Jet streams are narrow bands of strong winds that flow over thousands of kilometers predominantly from east to west.
- (b) Major jet streams are found near the upper levels of the atmosphere, around 9 to 16 km from the earth's surface.
- (c) In India, the Tropical jet stream influences the formation and duration of the summer monsoon.
- (d) Jet streams aid in the faster traveling of Aircraft.

Q53. Consider the following statements regarding the Bay of Bengal branch of the Indian Monsoon,

1. The Arakan Hills along the coast of Myanmar deflect it towards the Indian subcontinent.
2. It splits into two parts due to the Himalayas and the thermal low present in northwest 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



Q54. Consider the following statements

1. The duration of the monsoon decreases from southern India to northern India.
2. The amount of annual rainfall in the northern plains of India decreases from east to west.

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

Q55. Consider the following statements regarding El Nino

1. It refers to the warming phase of the surface waters of the Pacific and affects only the summer monsoon in India
2. It does not favor the Peruvian Fisherman.
3. It usually decreases the hurricane activity in the Atlantic

Which of the statements given above is/are correct?

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

Q56. Consider the following statements regarding Pacific Decadal Oscillation (PDO).

1. The PDO is a long-term fluctuation of the Pacific Ocean that waxes and wanes between cool and warm phases approximately every five to 20 years
2. The PDO is detected in the Pacific Ocean, north of 20°N.
3. Pacific Decadal Oscillation (PDO) affects the climatic rainfall patterns in the northeast.

Which of the statements given above is/are correct?

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

Q57. Consider the following statements

1. El Nino Modoki has been identified as a coupled ocean-atmosphere phenomenon in the tropical Pacific Ocean.
2. It is marked by warming water in the Pacific Ocean and along the Equator.

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

Q58. Consider the following statements

1. The movement of the ITCZ and the change in the pressure pattern with the seasons create a reversing wind pattern in Asia known as the monsoon.
2. The intertropical convergence zone (ITCZ) is the Zone of convergence of air masses along the equatorial trough.
3. Within the ITCZ the average winds are swift.
4. ITCZ is characterized by a band of clouds and thundershowers.

Which of the statements given above is/are correct?

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

Q59. Consider the following statements regarding Boreal Summer Intra Seasonal Oscillation (BSISO)

1. During its active phase, it can cause intense erosion and floods in the coastal region.
2. It occurs during the monsoon and helps to transfer heat from the Indian Ocean to the Pacific ocean

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

Q60. Consider the following statements regarding El Niño/Southern Oscillation

1. The presence of El Nino leads to an increase in sea-surface temperatures and the weakening of the trade winds in the region.
2. The Southern Oscillation refers to variations in the temperature of the surface of the tropical eastern Pacific Ocean, and air surface pressure in the tropical western Pacific.

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

Q61. Arrange the following from North to the south-

1. Taiwan strait
2. Scarborough Islands
3. Parcel Islands
4. Spratley islands

Select the correct code from below:

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

Q62. Consider the following statements

1. Mullaperiyar dam is located at the confluence of Mullayar river and Pamba river.
2. Mullaperiyar dam lies at the borders of Kerala and Tamil Nadu

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

Q63. Consider the following statements

1. Tea grows in a moderately humid and cold climate,
2. Iran is the largest export destination for Indian tea.
3. Tea is native to southeast Asia.
4. India is the largest producer of tea in the world

Which of the statements given above is/are **incorrect**?

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

Q64. Recently the term “**Middle-Eastern Quad** “ was seen in the news. Which of the following are members of the **Middle-Eastern Quad**?

- (a) India, Saudi Arabia, UAE, and the US,
- (b) India, Israel, Saudi Arabia, and the US,
- (c) India, Israel, Qatar, and the US,
- (d) India, Israel, UAE, and the US

Q65. Consider the following statements

1. Cyclones are named by the regional specialized meteorological centers and Tropical Cyclone Warning Centres in every ocean basin across the world.
2. The Indian Meteorological Department (IMD), names the cyclones which develop over the Bay of Bengal, the Arabian Sea, and the North Indian Ocean only

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

Q66. Consider the following statements

1. Kongka pass is located in Sikkim
2. Hot Springs is located on the banks of Chang Chenmo River valley in Ladakh
3. Chang Chenmo River is a tributary of the Zaskar river

Which of the statements given above is/are correct?

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

Q67. Consider the following statements

1. A tropical cyclone is a rotating low-pressure weather system that has organized thunderstorms but has no fronts.
2. Tropical cyclones rotate clockwise in the Northern Hemisphere.
3. Tropical cyclones across the globe, except South Pacific Typhoons, are moving westward, closer to land, in the recent decade

Which of the statements given above is/are correct?

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

Q68. Consider the following statements

1. Arcuate Delta resembles the arc of a circle.
2. Cuspate Delta gives a pointed tooth-like appearance.
3. Arcuate Delta and Cuspate Delta both are fluvial depositional landforms

Which of the statements given above is/are correct?

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

Q69. The type of Deltas formed by Narmada, and the Tapi is-

- (a) Gilbert deltas
- (b) Estuarine Delta
- (c) Cuspate Delta
- (d) Arcuate Delta

Q70. Consider the following pairs

1. Nile delta- wave-dominated delta
2. Yellow River -Gilbert deltas

Which of the pair/s given above is/are correct?

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

Q71. The process under which farmers grow trees for commercial and non-commercial purposes on their farm lands is termed as?

- (a) Rural forestry
- (b) Agro-forestry
- (c) Farm forestry
- (d) Social forestry

Q72. The “Biofloc technology” often seen in news is related to which of the following?

- (a) Bio-fertilizers
- (b) Aquaculture
- (c) Biogas from solid-waste
- (d) Renewable energy

Q73. Consider the following statements regarding the Deccan plateau?

1. It is a tectonically placid region and therefore the possibility of an earthquake is high.
2. In process of separation of India from Africa, a fault valley has been formed in the form of the Arabian Sea, and the Western Ghats have been left as the escarpment of this fault valley.
3. The Western Ghats are formed as block mountains.

Which of the statements given above is/are correct?

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

Q74. The Minimum Support Prices (MSPs) are announced by the Union Government for which of the following crop(s)?

1. Groundnut
2. Mustard
3. Safflower

Select the correct answer using the code given below:

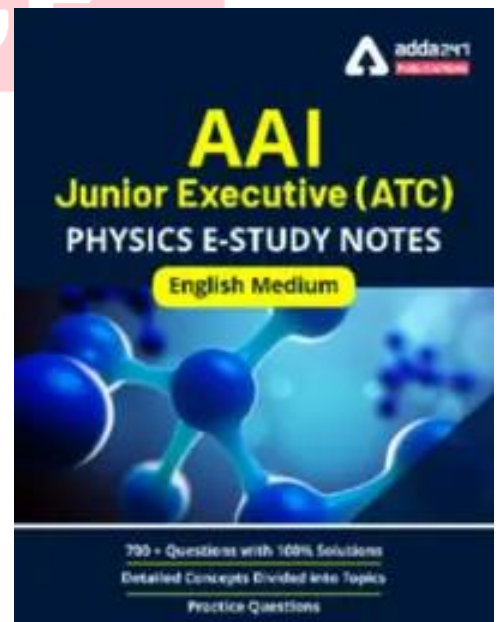
- (a) 1 and 2
- (b) 2 and 3
- (c) 1 and 3
- (d) 1,2 and 3

Q75. Consider the following statements regarding the process of advection?

1. It involves the transfer of heat through the vertical movement of air in the form of currents.
2. In middle latitudes, most diurnal variations in daily weather are caused by advection.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both are correct
- (d) None of the above



Q76. Depsang plains, recently seen in the news, are located

- (a) Across India-Pakistan border
- (b) Along the coast of Andaman and Nicobar
- (c) On the Line of Actual Control (LAC)
- (d) Across India-Bangladesh border

Q77. Consider the following statements regarding the necessary conditions for the formation of deltas?

- 1. The river must have a large load.
- 2. Presence of large lakes on the river course.
- 3. Presence of shallow adjoining sea or continental shelf.
- 4. Strong currents running at right angles to the mouth of the river.

Select the correct code from below:

- (a) 1 and 4 only
- (b) 1 and 3 only
- (c) 1, 2, and 3 only
- (d) All the above

Q78. Consider the following statements regarding Meanders,

- 1. They are a landform associated with a river in the young stage.
- 2. Coriolis force plays important role in the formation of meanders.

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

Q79. Consider the following pairs

Types of deserts Features

- 1. Hamada : large stretches of undulating sand dunes
- 2. Reg : extensive sheets of angular pebbles and gravels
- 3. Erg : large stretches of bare rocks

Which of the pair/s given above is/are correct?

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

Q80. Consider the following pairs

- 1. Typhoons: China Sea
- 2. Hurricanes: West Indian Islands in the Caribbean
- 3. Tornadoes: Guinea lands of West Africa
- 4. Willy-Willies: North Western Australia

Which of the pair/s given above is/are correct?

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

Q81. Consider the following statements

1. The number of cyclones in the Arabian Sea before and after the monsoon has increased over the years and is attributed to climate change.
2. The Bay of Bengal and the Arabian Sea generates half of the world's cyclones.

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

Q82. Consider the following statements

1. Mauna Loa is the largest active volcano in the world.
2. Mauna Loa is part of Hawaiian archipelago.
3. Mount St. Helens is an active stratovolcano located in United States

Which of the statements given above is/are correct?

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

Q83. Consider the following statements

1. Hawaii's volcanoes and Japan's Mount Fuji are examples for shield volcanoes.
2. The gas in the magma of Hawaii's volcanoes tends to escape, and so lava flows down the side of their mountains when they erupt

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

Q84. Consider the following statements regarding footloose industry in India.

1. These are generally non-polluting industries.
2. These are highly labour-intensive industries.
3. Factors like resources or transportation have very little effect on costs of these industries.

Which of the statements given above is/are correct?

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

Q85. Consider the following statements regarding Complex Volcano

1. It has an associated volcanic dome, either in its crater or on its flanks.
2. It always rises from the ground as a distinct, singular dome.

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

Q86. Palestinian territories borders with

1. Israel
2. Jordan
3. Egypt

Select the correct answer using the code below:

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

Q87. Which of the following countries with borders touching the Persian Gulf?

1. Bahrain
2. Iran
3. Iraq
4. Qatar
5. Oman

Select the correct answer using the code below:

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

Q88. From the theory of continental drift, the forces behind the drifting of continents are:

1. Tidal force
2. Gravitational force
3. Pole-fleeing force

Select the correct answer using the code below:

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

Q89. Consider the following statements

1. Almost 90 percent of the tropical storms form within 20° north or south of the [Equator](#).
2. Tropical Cyclone circulates about a center of low atmospheric pressure in a clockwise direction north of the Equator and an anti-clockwise direction to the south
3. The World Meteorological Organisation (WMO) assigns the name of the tropical cyclones originate over the Indian Ocean region as suggested by the countries surrounding this region.
4. The recent emerging Cyclonic storm “Jawad” is named by Oman

Which of the statements given above is/are correct?

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

Q90. Consider the following statements regarding Anticyclones

1. In this wind are changing in a clockwise direction in the Northern Hemisphere and vice versa in the southern hemisphere
2. The Tibetan High is anticyclone

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

Q91. Consider the following statements regarding Plate tectonics

1. It is the theory that Earth's outer shell is divided into several plates that glide over the mantle.
2. It is another name for the theory of continental drift.
3. It discards the conventional geological view that there is the convective current flowing in the mantle.

Which of the statements given above is/are correct?

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

Q92. Which of the following about the tectonic 'Indian Plate' is NOT correct?

- (a) It is a major tectonic plate.
- (b) It forms a convergent plate boundary with the Himalayas.
- (c) The Indian plate is tectonically separated from the Peninsular India plate.
- (d) The plate extends to Pakistan and Myanmar as well.

Q93. Lithospheric plates move around very slowly – just a few millimeters each year. What is the reason behind this movement?

- (a) Ocean currents
- (b) Movement of magma inside earth
- (c) Formation of folds on earth's crust
- (d) Rotation of earth

Q94. Most of the Earth's iron is stored in

- (a) Crust
- (b) Mantle
- (c) Core
- (d) Lithosphere

Q95. Consider the following statements

1. The crust is richer in Silicon than it is in oxygen and iron.
2. The crust is relatively enriched in less dense compounds and relatively depleted in iron compared to the rest of the earth.

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

Q96. The greatest single band of coniferous forests in the World is in

- (a) Siberia
- (b) Western Europe
- (c) Northern United States
- (d) Southern Peru

Q97. Eastern Ghats are eroded and cut through by:

- (a) Chambal and Mahanadi
- (b) Godavari and Krishna
- (c) Pennar and Gandak
- (d) Tapti and Kosi

Q98. The highest temperature is not recorded at the equator but slightly towards the north in the northern hemisphere. Why?

- (a) Due to the higher amount of insolation received
- (b) Due to latitude
- (c) Due to the presence of ITCZ
- (d) Due to unequal distribution of land and water

Q99. Consider the following statements regarding the Bay of Bengal branch of the Indian Monsoon,

1. The Arakan Hills along the coast of Myanmar deflect it towards the Indian subcontinent.
2. It splits into two parts due to the Himalayas and the thermal low present in northwest 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

Q100. Consider the following statements regarding El Nino

1. It refers to the warming phase of the surface waters of the Pacific and affects only the summer monsoon in India
2. It does not favor the Peruvian Fisherman.
3. It usually decreases the hurricane activity in the Atlantic

Which of the statements given above is/are correct?

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

DEFENCE

TEST SERIES

ENGLISH



AAI 2023
Junior Executive
ATC

50+ TOTAL TESTS

SOLUTIONS

S1. Ans.(a)

Sol. In 1865, the Danish geologist and mineralogist Johan Georg Forchhammer, with the help of naval and civilian collaborators, collected numerous samples of seawater from the Northern Atlantic and the Arctic Ocean. He wanted to determine why the salinity (or “saltiness”) of seawater varies in different areas of the ocean. Forchhammer put the samples through a detailed series of chemical analyses and found that the proportions of the major salts in seawater stay about the same everywhere. This constant ratio is known as Forchhammer’s Principle, or the Principle of Constant Proportions. In addition to this principle, Forchhammer is credited with defining the term salinity to mean the concentration of major salts in seawater. Forchhammer’s discovery helped scientists understand that salinity levels in seawater vary due to the addition or removal of fresh water, rather than differing amounts of salt minerals in the water. The principle is still applied today in marine research, and provides a simple way to estimate salinity and trace the mixing of water masses in the global ocean.

S2. Ans.(a)

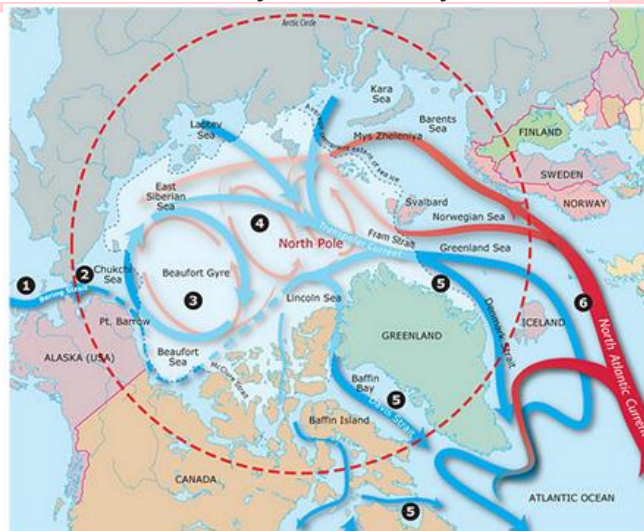
Sol. The Great Lakes are, from west to east: Superior, Michigan, Huron, Erie and Ontario. They are a dominant part of the physical and cultural heritage of North America. Shared with Canada and spanning more than 750 miles (1,200 kilometers) from west to east, these vast inland freshwater seas provide water for consumption, transportation, power, recreation and a host of other uses. The Great Lakes are one of the world’s largest surface freshwater ecosystems.

S3. Ans.(b)

Sol. There are four main types of estuaries, based on how they were formed. Bar-built estuaries form when a shallow lagoon or bay is protected from the ocean by a sand bar, delta or island. Coastal plains estuaries are formed when the rising sea fills existing river valleys. Tectonic estuaries are caused by the folding of land surfaces due to volcanic activity. Fjord and Ria estuaries are drowned river valleys where the river valley was originally formed by glacial action.

S4. Ans.(a)

Sol. The Beaufort Gyre is **one of the two major ocean currents in the Arctic Ocean**. It is roughly located north of the Alaskan and Canadian coast. In the past, Arctic sea-ice would circulate in the Beaufort gyre up to several years, leading to the formation of very thick multi-year sea-ice.



S5. Ans.(c)

Sol. The Atlantic Meridional Overturning Circulation (AMOC) is a large system of ocean currents that carry warm water from the tropics northwards into the North Atlantic. The AMOC is a large system of ocean currents, like a conveyor belt, driven by differences in temperature and salt content – the water’s density. As warm water flows northwards it cools and some evaporation occurs, which increases the amount of salt. Low temperature and a high salt content make the water denser, and this dense water sinks deep into the ocean. The cold, dense water slowly spreads southwards, several kilometres below the surface (As that water cools and sinks it drives a slow circulation of the oceans that is critical to global climate, affecting the location of droughts and frequency of hurricanes). Eventually, it gets pulled back to the surface and warms in a process called “upwelling” and the circulation is complete. This global process makes sure that the world’s oceans are continually mixed, and that heat and energy are distributed around the earth. This, in turn, contributes to the climate we experience today. As that water cools and sinks it drives a slow circulation of the oceans that is critical to global climate, affecting the location of droughts and frequency of hurricanes. It also stores heat-trapping carbon dioxide deep in the ocean.

S6. Ans.(c)

Sol. THE KUROSHIO IS a warm northeasterly ocean current off the coast of Japan. This current is also called the gulf stream of the Pacific or Japan Current. Kuroshio means “the black stream” in Japanese, named after the deep ultramarine color of the high salinity water, which is found flowing north of the current’s axis. The system includes the following branches: Kuroshio, up to 35 degrees N; Kuroshio extension, extending eastward into two branches up to 160 degrees E longitude; North Pacific current, a further eastward continuation, which throws branches to the south as far as 150 degrees W; Tsushima current, branches of the main current that run into the Japan Sea, along the west coast of JAPAN; And Kuroshio counter-current, the large swirl or eddy on the east and south east of the Kuroshio.

S7. Ans.(d)

Sol. The ocean floors can be divided into four major divisions: The Continental Shelf; The Continental Slope; The Deep Sea Plain; The Oceanic Deeps. Besides, these divisions there are also major and minor relief features in the ocean floors like ridges, hills, sea mounts, guyots, trenches, canyons, etc.

S8. Ans.(c)

Sol. Scientists estimate that 50-80% of the oxygen production on Earth comes from the ocean. The majority of this production is from oceanic plankton — drifting plants, algae, and some bacteria that can photosynthesize. One particular species, Prochlorococcus, is the smallest photosynthetic organism on Earth. But this little bacteria produces up to 20% of the oxygen in our entire biosphere. That’s a higher percentage than all of the tropical rainforests on land combined. It’s important to remember that although the ocean produces at least 50% of the oxygen on Earth, roughly the same amount is consumed by marine life. Like animals on land, marine animals use oxygen to breathe, and both plants and animals use oxygen for cellular respiration. Oxygen is also consumed when dead plants and animals decay in the ocean.

S9. Ans.(c)

Sol. A massive “dead zone” in the Arabian Sea is the largest in the world, a new study reveals. Dead zones are oxygen-starved ocean regions where few organisms can survive. They emerge in ocean depths ranging from 650 to 2,600 feet (200 to 800 meters), when influxes of chemical nutrients — typically from human pollution — spur algae growth, which sucks up oxygen. A significant oxygen-deprived region has bloomed in the Gulf of Oman for decades, but it was last surveyed in the 1990s. The Gulf of Oman, which spans 70,000

square miles (181,000 square kilometers), connects the Arabian Sea to the Persian Gulf. It has long been off-limits to researchers because of the region's political instability and the threat of ocean piracy. For eight months, these AUVs gathered data on oxygen levels, and then transmitted their readings to the scientists via satellite.

S10. Ans.(b)

Sol. Namib Desert: the Namib Desert is a direct result of the Benguela Current. Seamounts near to the coastline beneath the Atlantic's surface cause the icy Benguela River to flow very close to the Namibian coast. This causes a harsh coastal climate with very little rainfall. Atacama Desert: Cold ocean currents contribute to the formation of coastal deserts. Air blowing toward shore, chilled by contact with cold water, produces a layer of fog. This heavy fog drifts onto land.

The Atacama Desert, on the Pacific shores of Chile, is a coastal desert. Some areas of the Atacama are often covered by fog. But the region can go decades without rainfall. In fact, the Atacama Desert is the driest place on Earth.

Gobi Desert: Interior deserts, which are found in the heart of continents, exist because no moisture-laden winds reach them. By the time air masses from coastal areas reach the interior, they have lost all their moisture. Interior deserts are sometimes called inland deserts. The Gobi Desert, in China and Mongolia, lays hundreds of kilometers from the ocean. Winds that reach the Gobi have long since lost their moisture. The Gobi is also in the rain shadow of the Himalaya Mountains to the south Geomorphology

S11. Ans.(d)

Sol. Recently a medicane named Ianos made landfall along the coast of Greece.

• Medicanes (MEDiterranean hurriCANES) refer to tropical stormlike cyclone observed across the Mediterranean Sea.

Medicanes occur more in colder waters than tropical cyclones, hurricanes and typhoons. Hence, the cores of these storms are colder in comparison to the warm cores of tropical cyclones. Since warmer cores tend to carry more moisture (hence rainfall), are bigger and have swifter winds, medicanes are weaker and smaller in size than the tropical cyclones. Like tropical storms, medicanes have a symmetric structure and a clearly visible eye.

• The Mediterranean is a generally dry, evaporative sea and cyclonic storms don't grow as much. According to a study published in 2011, only one or two medicanes occur per year.

• However, recent studies have shown that medicanes are likely to become a bigger problem as the planet warms due to climate change

S12. Ans.(c)

Sol. It is World's Largest Wetland and sprawls over more than 150,000 sq km in Brazil and also extends into Bolivia and Paraguay.

It is burning as vegetation compacted under the marshy floodwater during the wet season dries out as ponds and lagoons evaporate, leaving flammable deposits underground

The Pantanal comprises about 3% of the entire world's wetlands. A conservative, cumulative estimate of the size of the world's wetlands places the figure at 1.4 billion acres

This massive wetland has the largest concentration of crocodiles in the world, with approximately 10 million caimans. Jaguars, the largest feline in the Americas, hunt caiman in the Pantanal, which has one of the highest density of jaguars anywhere in the world. The Pantanal is also home to the biggest parrot on the planet, the hyacinth macaw. Sighting these animals and others help attract the 1 million tourists who visit the Pantanal every year.

The areas that are protected are globally significant, with parts that fall under an agreement called Ramsar that requires national governments to conserve and wisely use wetlands, and some that are UNESCO World Heritage Sites and Biosphere Reserves. Around 95% of the Pantanal is under private ownership, the majority of which is used for cattle grazing.

S13. Ans.(d)

Sol. Azerbaijan has carried out an air and artillery attack on Nagorno-Karabakh.

Key points:

- Nagorno-Karabakh is a breakaway region that is inside Azerbaijan but is run by ethnic Armenians.
- It broke away from Azerbaijan in a conflict that broke out as the Soviet Union collapsed in 1991.
- Though a ceasefire was agreed in 1994, Azerbaijan and Armenia frequently accuse each other of attacks around Nagorno-Karabakh and along the separate Azeri-Armenian frontier

S14. Ans.(d)

Sol. Context: The region is in the news due to conflict between Azerbaijan and Armenia over the Nagorno-Karabakh region. Look at the map. Caspian sea does not touch Armenia.



S15. Ans.(b)

Sol. Tasmania is an island state of Australia. It is located 240 km to the south of the Australian mainland, separated by the **Bass Strait**. The state encompasses the main island of Tasmania, the 26th-largest island in the world, and the surrounding 334 islands

About 380 **pilot whales** were confirmed **dead** in **Tasmania**. More than 450 long-finned **pilot whales** were caught on sandbanks and beaches inside Macquarie Harbour

S16. Ans.(a)

Sol. These tribes are from Odisha. These groups are classified as Particularly Vulnerable Tribal Groups. Of the 62 tribal groups in Odisha, 13 are recognised as PVTGs – the highest in the country. Why in News? Members of these tribes have tested positive for the novel coronavirus.

S17. Ans.(d)

Sol. The north-eastern plateau is an extension of the main peninsular plateau. It is believed that due to the force exerted by the north-eastward movement of the Indian plate, at the time of the Himalayan origin, a huge fault was created between the Rajmahal hills and the Meghalaya plateau.

- Later, this depression got filled up by the deposition activity of numerous rivers.
- The Meghalaya and the Karbi Anglong plateaus stand detached from the main Peninsular Block.
- The Meghalaya plateau is further subdivided into three: (i) The Garo Hills; (ii) The Khasi Hills; and (iii) The Jaintia Hills, named after the tribal groups inhabiting this region

S18. Ans.(d)

Sol. The Malwa plateau is bounded by the Madhya Bharat Plateau and Bundelkhand Upland to the north, the Vindhya Range to the east and the south, and the Gujarat plains to the west.

- It is volcanic in origin and is composed of lava flows. As such, it is covered with black soil.
- The Malwa plateau ranges in elevation from about 1,650 to 2,000 feet (500 to 600 metres). Erosion has carved the ancient lava flows into the isolated mesas, found throughout the plateau, together with an occasional sandstone hill.
- This plateau has both, the Arabian, as well as the Bay of Bengal drainage systems.
- The western part of the region is drained by the Mahi river, the middle section by the Chambal River, and the eastern part by the Betwa river and the headwaters of the Dhasan and the Ken river

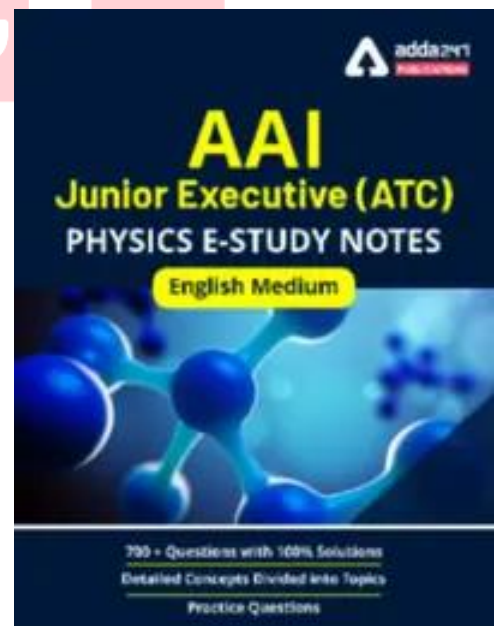
S19. Ans.(c)

Sol. Lithosphere: It is mostly made up of granitic rocks with a thickness of 100 kilometres. Silica and aluminium are the major minerals. The average density of the lithosphere is 3.5. Pyrosphere: Basalt is the main constituent mineral. The thickness of this layer is 2,780 kilometres and the average density is 5.6. Barysphere: Iron and nickel are the two important minerals. This layer spans nearly 200 kilometres to the core. The average density varies from 8 to 11.

S20. Ans.(a)

Sol. The mantle is characterized by an abrupt rise in the intensity of the earthquake waves.

- It is known as the 'mesosphere', located at the boundary between the lower crust and the upper parts of the mantle.
- The speed of the seismic waves is 6.9 kilometres per second at the base of the lower crust.
- It rises rapidly to 8.1 kilometres per second due to the discontinuity.
- It lies between the separation zone of the lower crust and the upper mantle.
- This zone of separation was discovered by a Yugoslavian seismologist, named Andrija Mohorovicic, during 1909.
- Thereafter, it came to be known as the 'Mohorovicic Discontinuity' or the 'Moho Discontinuity'.



S21. Ans.(a)

Sol. Sedimentary rocks are formed by the accumulation of sediments. There are three basic types of sedimentary rocks. Clastic sedimentary rocks such as breccia, conglomerate, sandstone, siltstone, and shale are formed from mechanical weathering debris. Chemical sedimentary rocks, such as rock salt, iron ore, chert, flint, some dolomites, and some limestone, form when dissolved materials precipitate from solution. Organic sedimentary rocks such as coal, some dolomites, and some limestone, form from the accumulation of plant or animal debris.

S22. Ans.(c)

Sol. Dharwar system is later than the Archean system but older than the other systems. The Dharwar period of rock formation has been largely fixed from 2500 million years ago to 1800 million years ago. Dharwar Rock System is special because it is the first metamorphic sedimentary rocks in India. They are named Dharwar system because they were first studied in Dharwar region of Karnataka. But they are also found in Aravallis, Tamil Nadu, Chota-nagpur plateau, Meghalaya, Delhi, and the Himalayas region. The Dharwar rocks are rich in iron ore, manganese, lead, zinc, gold, silver etc.

S23. Ans.(b)

Sol. Igneous Rocks – produced by solidification of molten magma from the mantle. Magma that solidifies at the Earth's surface conceives extrusive or volcanic igneous rocks. When magma cools and solidifies beneath the surface of the earth intrusive or plutonic igneous rocks are formed. Characteristics of Igneous rocks are: Formed by the cooling and solidification of lava. Hard in nature. Consists of crystals, hence also called as crystalline rock. Examples are Granite and Basalt. These rocks are formed inside as well as on the earth. Fossils are not present in this rock. Igneous rocks are of two types : a. Extrusive rocks b. Intrusive rocks It is non porous rock. NOTE: Sedimentary rocks are most widespread on the surface of the earth and constitute about 75% of the surface area of globe.

S24. Ans.(d)

Sol. Sedimentary rocks are formed by the accumulation of sediments. There are three basic types of sedimentary rocks. Clastic sedimentary rocks such as breccias, conglomerate, sandstone, siltstone, loess and shale are formed from mechanical weathering debris. Chemical sedimentary rocks, such as rock salt, iron ore, chert, flint, some dolomites, and some limestone, form when dissolved materials precipitate from solution. Organic sedimentary rocks such as coal, some dolomites, and some lime stones, form from the accumulation of plant or animal debris.

S25. Ans.(a)

Sol. Option 1 is correct. Rezang La is a mountain pass on the south-eastern approach to Chushul Valley in the union territory of Ladakh. A major battle was fought between Indian and Chinese forces in 1962 at Rezang La.

Option 2 is incorrect. Nathu La is a mountain pass in the Himalayas in East Sikkim district. It connects the Indian state of Sikkim with China's Tibet Autonomous Region.

Option 3 is correct. Khardung La is a mountain pass in the Leh district of the union territory of Ladakh. The pass on the Ladakh Range is north of Leh and is the gateway to the Shyok and Nubra valleys.

S26. Ans.(a)

Sol. The Macartney–MacDonald Line is a proposed boundary in the area of Aksai Chin. It was proposed by British Indian Government to China in 1899 via its envoy to China, Sir Claude MacDonald. This survey was officially sent by the British to China in 1899, was not followed up, and the border remained 'undefined'. The Johnson-Ardagh Line surveyed in 1865, ran along the Kunlun Mountain, included Aksai Chin in Kashmir and was not communicated to China.

S27. Ans.(a)

Sol. Option 1 is incorrectly matched. Kibithu or Kibithoo is a town in Arunachal Pradesh in Anjaw district. It is one of the easternmost permanently populated towns of India.

Option 2 is incorrectly matched. Sumdorong Chu is a tributary of the Nyamjang Chu River that flows along the India-China border between the Tibet and the Tawang district of Arunachal Pradesh.

Option 3 is correctly matched. Pasighat is in the East Siang district in the Indian state of Arunachal Pradesh.

S28. Ans.(a)

Sol.



S29. Ans.(b)

Sol. Plains can be classified into the following types: (a) Structural plains, (b) Erosional plains, and (c) Depositional plains:

The plains formed by the continuous long term erosion or scouring of uplands are called erosional plains

S30. Ans.(d)

Sol. Scroll plain, a plain through which a river meanders with a very low gradient.

Lacustrine plain, a plain that originally formed in a lacustrine environment, that is, as the bed of a lake.

S31. Ans.(b)

Sol. Statement 1 is incorrect. In Ensemble Forecasting, instead of running just a single forecast, the computer model is run a number of times from slightly different starting conditions. The complete set of forecasts is referred to as the ensemble, and individual forecasts within it as ensemble members. Statement 2 is correct. Various countries have migrated to ensemble weather forecasting for optimal results. A forecast is an estimate of the future state of the atmosphere. It is created by estimating the current state of the atmosphere using observations, and then calculating how this state will evolve in time using a numerical weather prediction computer model. The ensemble forecasts give the forecaster a much better idea of what weather events may occur at a particular time. By comparing these different forecasts, the forecaster can decide how likely a particular weather event will be.

S32. Ans.(b)

Sol. Statement 1 is incorrect. Cyclones are characterized by inward spiralling winds that rotate about a zone of low pressure. As the storm system rotates faster and faster, an eye forms in the centre. It is very calm and clear in the eye, with very low air pressure. Higher pressure air from above flows down into the eye. Statement 2 is correct. The warm, moist air over the ocean rises upward from near the surface. Tropical cyclones usually weaken when they hit land, because they are no longer being “fed” by the energy from the warm ocean waters. However, they often move far inland, dumping many inches of rain and causing lots of wind damage before they die out completely.

S33. Ans.(b)

Sol. Statement 1 is incorrect. The term El Niño refers to the large-scale ocean-atmosphere climate interaction linked to a periodic warming in sea surface temperatures across the central and east-central Equatorial Pacific. La Nina episodes represent periods of below-average sea surface temperatures across the east-central Equatorial Pacific. Global climate La Niña impacts tend to be opposite those of El Niño impacts. In the tropics, ocean temperature variations in La Niña also tend to be opposite those of El Niño. Statement 2 is correct. La Nina results in heavy or better monsoon rains in India, droughts in Peru and Ecuador, heavy floods in Australia, and high temperatures in the Indian Ocean and Western Pacific. # According to the World Meteorological Organization (WMO), the La Nina weather phenomenon is back in the central and eastern equatorial Pacific Ocean after nearly a decade’s absence.

S34. Ans.(a)

Sol. Statement 1 is correct. The Indian southwest monsoon (SWM) season of June to September is the chief rainy season for India and about 75% of the country’s annual rainfall is realized during this season. Subsequent to the withdrawal of SWM, the northeast monsoon (NEM), a small-scale monsoon confined to parts of southern peninsular India occurs. Statement 2 is incorrect. The rainfall from the NEM is mostly confined to Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh, Rayalaseema and South Interior Karnataka regions. The northeast monsoon derives its name from the direction in which it travels – from the northeast to the southwest. The normal date of setting in of easterlies over the southeastern peninsular India is 14th October.

S35. Ans.(d)

Sol. The Fujiwhara effect refers to tendency of two nearby tropical cyclones to rotate cyclonically about each other. When two hurricanes spinning in the same direction pass close enough to each other, they begin an intense movement around their common center. If one hurricane is a lot stronger than the other, the smaller one will orbit it and eventually come crashing into its vortex to be absorbed. Two storms closer in strength can gravitate towards each other until they reach a common point and merge, or merely spin

each other around for a while before shooting off on their own paths. In rare occasions, the effect is additive when the hurricanes come together, resulting in one larger storm instead of two smaller ones. # Two tropical storms named Marco and Laura forming in the western Atlantic Ocean at nearly the same time are likely to impact the Gulf of Mexico sparking concerns of the rare Fujiwhara effect.

S36. Ans.(a)

Sol. All clouds are made up of basically the same thing: water droplets or ice crystals that float in the sky. But all clouds look a little bit different from one another, and sometimes these differences can help us predict a change in the weather. Cirrus clouds are delicate, feathery clouds that are made mostly of ice crystals. Their wispy shape comes from wind currents which twist and spread the ice crystals into strands. Altocumulus clouds have several patchy white or gray layers, and seem to be made up of many small rows of fluffy ripples. They are lower than cirrus clouds, but still quite high. They are made of liquid water, but they don't often produce rain. Cumulus clouds look like fluffy, white cotton balls in the sky. They are beautiful in sunsets, and their varying sizes and shapes can make them fun to observe! Stratocumulus clouds are patchy gray or white clouds that often have a dark honeycomb-like appearance.

S37. Ans.(c)

Sol. The prefix "nimbo-" or the suffix "-nimbus" are low-level clouds that have their bases below 2,000 meters (6,500 feet) above the Earth. ☑ Clouds that produce rain and snow fall into this category. ("Nimbus" comes from the Latin word for "rain.") Two examples are the nimbostratus or cumulonimbus clouds. ☑ Nimbostratus clouds bring continuous precipitation that can last for many hours. These low-level clouds are full of moisture. ☑ Cumulonimbus clouds are also called thunderheads. Thunderheads produce rain, thunder, and lightning. ☑ Many cumulonimbus clouds occur along cold fronts, where cool air is forced under warm air. ☑ They usually shrink as evening approaches, and moisture in the air evaporates. Cumulonimbus clouds gradually become stratocumulus clouds, which rarely produce rain.

S38. Ans.(b)

Sol. The Roaring Forties take shape as warm air near the equator rises and moves toward the poles. ☑ Warm air moving pole-ward (on both sides of the equator) is the result of nature trying to reduce the temperature difference between the equator and at the poles created by uneven heating from the sun. ☑ This process sets up global circulation cells, which are mainly responsible for global-scale wind patterns. ☑ The air descends back to Earth's surface at about 30 degrees' latitude north and south of the equator. This is known as the high-pressure subtropical ridge, also known as the horse latitudes. ☑ Here, as the temperature gradient decreases, air is deflected toward the poles by the Earth's rotation, causing strong westerly and prevailing winds at approximately 40 degrees. These winds are the Roaring Forties. ☑ The Roaring Forties in the Northern Hemisphere don't pack the same punch that they do in the Southern Hemisphere. ☑ This is because the large land masses of North America, Europe, and Asia obstructing the airstream, whereas, in the southern hemisphere, there is less land to break the wind in South America, Australia, and New Zealand. ☑ While the Roaring Forties may be fierce, 10 degrees south are even stronger gale-force winds called the Furious Fifties. ☑ And 10 degrees south of the Furious Fifties lay the Screaming Sixties! We can thank the intrepid sailors of yore for these wildly descriptive terms



TEST SERIES
ENGLISH



AAI 2023
Junior Executive
ATC

50+ TOTAL TESTS

S39. Ans.(b)

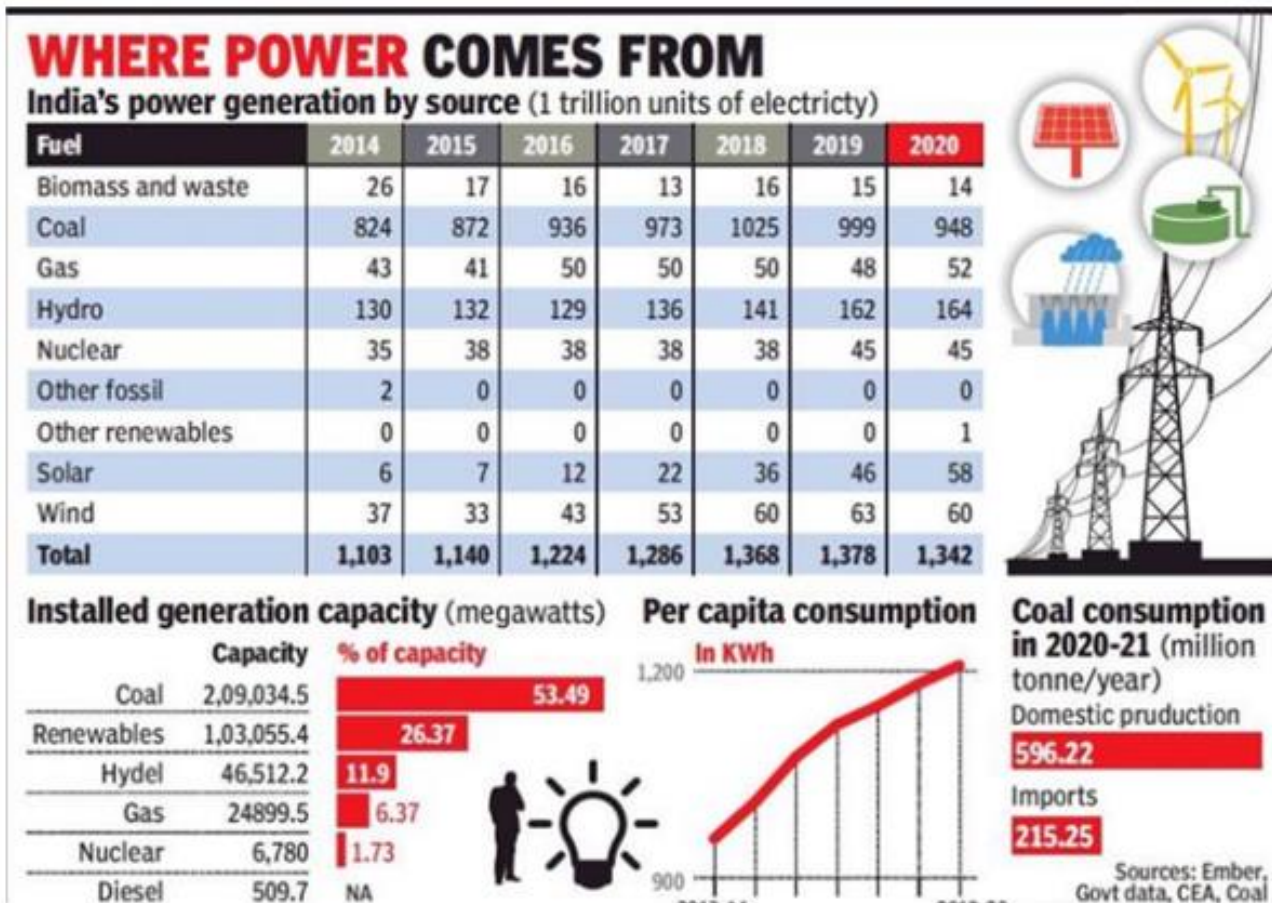
Sol. The hot deserts lie astride the Horse Latitudes or the sub-tropical high pressure belts where the air is descending, a condition is least favourable for precipitation of any kind to take place.

S40. Ans.(c)

Sol. The periodical rise and fall of the sea level, once or twice a day, mainly due to the attraction of the sun and the moon, is called a tide. Movement of water caused by meteorological effects (winds and atmospheric pressure changes) is called surges. Surges are not regular like tides.

S41. Ans.(b)

Sol.



The government has installed renewable energy projects of 152.90 gigawatts (GW) capacity as of February 2022. This includes 50.78 GW from solar, 40.13 GW from wind, 10.63 GW from bio-power, 4.84 GW from small hydropower and 46.52 GW from large hydropower.

S42. Ans.(a)

Sol. Iron ore occurs most abundantly in the form of oxides. Other forms are carbonates, hydroxides, sulfides and silicates. It is also found in association with titanium dioxide. Hematite is the most abundant iron ore mineral and is the main constituent of the iron ore industry in India. The major Hematite type iron deposits are located in well-defined belts in the States of Odisha, Jharkhand, Chhattisgarh, Maharashtra, Goa and Karnataka.

S43. Ans.(a)

Sol. When human beings feel hot, they cool themselves by sweating. However, if the humidity is too high, sweating no longer works and one risks dangerous overheating. In this case, “wet-bulb” temperature is used to measure both heat and humidity, helping estimate whether conditions are safe for humans or not. A humid heatwave was a lot more dangerous compared to a dry heatwave. While the human skin has a temperature of around 35 degrees Celsius, a wet bulb with the same heat means sweat can no longer be used to cool the body. Wet-bulb temperature is measured by wrapping a wet cloth around the bulb of a thermometer. It represents the lowest temperature air can reach by evaporation of water. Internationally, the wet-bulb globe temperature is calculated by using a globe thermometer and additionally accounting for solar radiation and wind speed

S44. Ans.(d)

Sol. Destabilizing geological processes, coupled with extreme rainfall events and unscientific farming and construction activities, pose a serious threat to human habitation in the highlands of Kerala, according to scientists. A team of scientists from the National Centre for Earth Science Studies (NCESS) who carried out an investigation in the wake of the heavy rain and devastating floods in August 2018 found that land subsidence, lateral spread, and soil piping were an immediate threat to life and property in the uplands.

S45. Ans.(b)

Sol. Western disturbances are periodic influxes of moisture-laden clouds from the Mediterranean that are common during winter. Overall elevated temperatures are also contributing to warmer waters in the Arctic Ocean and drawing colder air from the poles with greater intensity. This has added to the increased moisture, thereby seeding more intense western disturbance activity over north India

S46. Ans.(c)

Sol. Sihanoukville is a coastal city in Cambodia. A strategic port is being constructed here by China off the gulf of Thailand.

Sievierodonetsk is one of the largest cities of the Donbas region Located nearly 140 km south of the Russian border. It is located near the left bank of the Siverskiy Donets river

A multinational peacekeeping exercise-Ex Khaan Quest 2022 featuring participation from military contingents from 16 countries including India commenced in Ulaanbaatar, Mongolia

S47. Ans.(c)

Sol. The Rabha is a Tibeto-Burman community in the Indian states of Assam, Meghalaya, and West Bengal. They primarily inhabit the plains of Lower Assam and the Dooars, while some are found in the Garo Hills.

S48. Ans.(d)

Sol. Temperatures should reach at least 40°C in the plains and at least 30°C in the hilly regions and should reflect an increase of at least 5°C-6°C above the normal temperature to be classified as a heatwave. India Meteorological Department (IMD) under Ministry of Earth Sciences declares heat waves

S49. Ans.(c)

Sol. India is the world's biggest sugar producer.

India is likely to impose a ceiling on sugar exports for a second straight year starting this October, aiming to ensure ample domestic supplies and keep a lid on local prices.

Among factors underpinning **global sugar prices** this year are **lower sugar output in Brazil, the biggest exporter**, and crude oil prices at multi-year highs

S50. Ans.(a)

Sol. It is the imaginary line indicating the areas covered by the Southwest monsoon.

Context: The southwest monsoon has started inconsistently in different parts of the country, with rain eluding many states but lashing parts of other states. The all-India rainfall was 18% short of normal until Friday. But while a majority of India awaits rain, Assam and Meghalaya have been **submerged in record rainfall of 1,000mm in the last 24 hours.**

S51. Ans.(a)

Sol. To understand the mechanism of the monsoons, the following facts are important.

(a) The differential heating and cooling of land and water create a low pressure on the landmass of India while the seas around experience comparatively high pressure.

(b) The shift of the position of Inter-Tropical Convergence Zone (ITCZ) in summer, over the Ganga plain (this is the equatorial trough normally positioned about 5°N of the equator – also known as the monsoon trough during the monsoon season).

(c) The presence of the high-pressure area, east of Madagascar, approximately at 20°S over the Indian Ocean. The intensity and position of this high-pressure area affect the Indian Monsoon. (d) The Tibetan plateau gets intensely heated during summer, which results in strong vertical air currents and the formation of high pressure over the plateau at about 9 km above sea level. (e) The movement of the westerly jet stream to the north of the Himalayas and the presence of the tropical easterly jet stream over the Indian peninsula during summer

S52. Ans.(a)

Sol. Jet streams are narrow bands of strong winds that flow over thousands of kilometers from west to east. Major jet streams are found near the upper levels of the atmosphere, around 9 to 16 km from the earth's surface, and can reach speeds of over 320 kph.

The jet streams shift to the north or south depending on the season. During winters, the wind current is the strongest. They are also closer to the Equator during winter. The major jet streams are the Polar Front, Subtropical, and Tropical jet streams.

In India, the Tropical jet stream influences the formation and duration of the summer monsoon. Most commercial planes fly at the jet stream level, and a strong jet stream can provide a potent tailwind to a flight traveling from west to east, like the British Airways flight, which flew from New York to London. This helps reduce the travel time for such flights, as their speeds are boosted.

S53. Ans.(c)

Sol. The Bay of Bengal branch strikes the coast of Myanmar and part of southeast Bangladesh. But the Arakan Hills along the coast of Myanmar deflect a big portion of this branch towards the Indian subcontinent. **Hence statement 1 is correct.**

• The monsoon, therefore, enters West Bengal and Bangladesh from the south and southeast instead of from the south-westerly direction. From here this branch splits into two under the influence of the Himalayas and the thermal low in northwest India. It's one branch that moves westward along the Ganga plains reaching as far as the Punjab plains. The other branch moves up the Brahmaputra valley in the north and the northeast causing widespread rains. Its sub-branch strikes the Garo and Khasi Hills of Meghalaya. Mawsynram located on the crest of Khasi hills receives the highest average annual rainfall in the world.

Hence statement 2 is correct.

S54. Ans.(a)

Sol. The amount of annual rainfall in the northern plains of India increases from east to west.

S55. Ans.(b)

Sol. **El Nino** is the name given to a slight warming of the surface waters of the Pacific. It is the opposite of La Nina, which is cooling. As the ocean is one of the biggest influences on our weather, both of the phenomena have a dramatic effect on the weather around the globe.

To explain what happens during an El Nino event, we need to know what happens 'normally', at a time when there is no El Nino or La Nina. The warmest part of the Pacific Ocean is the region near the equator. Due to the spinning of the earth, the prevailing winds flow from east to west. This pushes the warm waters westwards, towards Indonesia.

In the east, around the coast of South America, cool waters would normally well up. These waters are rich in nutrients and fish and provide plenty of food for the Peruvian Fisherman. During an El Nino event, the prevailing winds across the Pacific weaken, and sometimes they can even reverse and blow the other way. This allows some of the warmer waters to move eastwards, away from Indonesia and towards South America.

El Nino has some effects that are easy to explain; for example, as the waters near the coast of South America are warmer than usual, it makes sense that the weather in the region is also warmer than usual. This will increase evaporation and therefore the region will also see more rain than in a typical year. It also is intuitive that because the warmer waters are moving away from Indonesia, the weather here is drier than usual.

S56. Ans.(d)

Sol. The PDO is a long-term fluctuation of the Pacific Ocean that waxes and wanes between cool and warm phases approximately every five to 20 years. The change in rainfall to sea surface temperatures over the subtropical Pacific Ocean, which varies in a cycle and each phase of which lasts a decade. The peak comes every 20 years.

The PDO is detected as warm or cool surface waters in the Pacific Ocean, north of 20°N.

Recently *A Journal of Climate* research paper from 2016 also found that PDO is being influenced by global warming as it decreases the difference of temperatures among the layers of the ocean. It said the peak of PDO will change from 20 to 12 years, which may have an impact on the monsoon rainfall in North East India.

S57. Ans.(a)

Sol. Modoki is a Japanese word for "same but different". El Nino Modoki events are a rarer subset of the regular El Nino and are marked by warming water in the Pacific, but not along the Equator.

Instead, the warming is in the mid-Pacific and the warming is not as strong as in the regular El Nino events. Many times, in a strong Modoki, water actually cools below normal off the coast of Peru, which is the opposite of a normal El Nino event.

S58. Ans.(b)

Sol. Statement 3 is incorrect.

Within the ITCZ the winds are mild as it's the area of rising air currents. Hence they are called the doldrums by the sailors.

ITCZ-

It is a zone between the northern and southern hemisphere where winds blowing equator-ward from the mid-latitudes and winds flowing poleward from the tropics meet. It shifts from north and south seasonally according to the movement of the Sun. For Example- when the ITCZ is shifted to the north of the Equator the southeast trade wind changes to a southwest wind as it crosses the Equator. The ITCZ shifts only between 40° to 45° of latitude north or south of the equator based on the pattern of land and ocean.

What causes ITCZ (Intertropical Convergence Zone)?

ITCZ (Intertropical Convergence Zone) is caused by the convergence of northeast and southeast trade winds in the area encircling Earth near the Equator. For better understanding, we must know about the trade winds and air masses.

1. Trade Winds: Easterly winds that circle the Earth near the equator.

2. Air Masses: A volume of air defined by its temperature and water vapor content. In tropical latitudes, this air mass is hot to very hot with high relative humidity bringing unstable weather.

It appears as a band of clouds consisting of showers with occasional thunderstorms that encircles the globe near the equator due to the convergence of the trade winds.

S59. Ans.(c)

Sol. Statement 1 is correct: It is a climatic phenomenon that regulates heat in the oceans. They also induce high wave activity in the north Indian Ocean and the Arabian Sea. During its active phase, it enhances monsoon winds and leads to swelling of surface waves. This swelling makes coastal areas prone to erosion and floods.

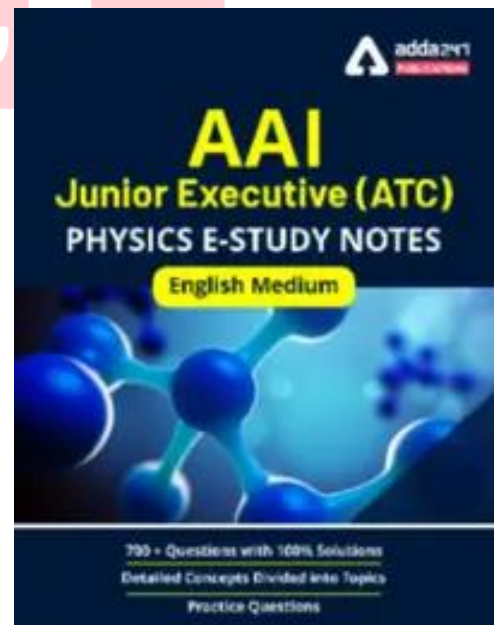
Statement 2 is correct: BSISO is the heat transfer from the Indian Ocean to the western Pacific Ocean roughly every 10-50 days during monsoon. It is one of the prominent sources of short-term climate variability.

BSISO strongly influences persistent heavy rainfall in East Asia and tropical cyclone activities in the tropical western Pacific. It propagates northward in the Asian summer monsoon region, which has an important impact on the weather. Rainfall variability of the East Asian summer monsoon system is largely determined by the northward propagating of BSISO. For example, the timing of the active and break of the Asian monsoon as well as precipitation is associated with it. Indian National Centre for Ocean Information Services (INCOIS) has found a better way to forecast waves based on this phenomenon.

S60. Ans.(c)

Sol. El Niño–Southern Oscillation (ENSO) is an irregularly periodic variation in winds and sea surface temperatures over the tropical eastern Pacific Ocean, affecting the climate of much of the tropics and subtropics. The warming phase of the sea temperature is known as El Niño and the cooling phase as La Niña.

The Southern Oscillation is the accompanying atmospheric component, coupled with the sea temperature change: El Niño is accompanied by high air surface pressure in the tropical western Pacific and La Niña with low air surface pressure there. The two periods last several months each and typically occur every few years with varying intensity per period.



S61. Ans.(a)

Sol.



S62. Ans.(d)

Sol. The [Mullaperiyar dam](#) is constructed at the confluence of the Periyar and Mullayar rivers.

It is located entirely in the state of Kerala but it feeds the nearby state Tamilnadu.

This dam is operated by Tamil Nadu following an 1886 lease indenture for 999 years (the Periyar Lake Lease Agreement) that was signed between the Maharaja of Travancore and the Secretary of State for India for the Periyar Irrigation works. Constructed between 1887 and 1895, the dam redirected the river to flow towards the Bay of Bengal, instead of the Arabian Sea and provide water to the arid rain region of Madurai in Madras Presidency.

S63. Ans.(d)

Sol. Tea grows in a moderately hot and humid climate, which is preferred for better yield, crop distribution, and quality. An ambient temperature between 13°C and 28-32°C is conducive to the growth of tea. In India, the temperature in winters is around or below 12°C and there is hardly any growth during this period. This is called **Winter Dormancy**.

India comes in second in the tea cultivation list after china at a tea production rate of 1.2 million tons

Iran is the largest export destination for Indian tea by a margin of 26%.

S64. Ans.(d)

Sol. The first virtual summit of the foreign ministers of the US, India, Israel, and UAE was recently held. At the end of the meet, the four nations agreed to form a new international economic forum to utilize the “unique array of capabilities, knowledge, and experience” that each offers.

The group is already being dubbed the ‘New Quad’ or the ‘Middle-Eastern Quad’ on the lines of the Quadrilateral Security Dialogue (QSD)

The group is intended as an “international economic forum” that will work on furthering the economic and political ties between the four countries and breaking the hegemony of China in the global arena.

S65. Ans.(c)**Sol.** Tropical cyclones

- In 2000, a group of nations which is called WMO/ESCAP (World Meteorological Organisation/United Nations Economic and Social Commission for Asia and the Pacific), decided to start naming cyclones.
- The group is comprised of Bangladesh, India, the Maldives, Myanmar, Oman, Pakistan, Sri Lanka, and Thailand, region.
- The WMO/ESCAP expanded to include five more countries in 2018 — Iran, Qatar, Saudi Arabia, United Arab Emirates, and Yemen.
- Each country sent in suggestions and they were finalized to prepare a list by the WMO/ESCAP Panel on Tropical Cyclones (PTC).
- Cyclones are named by the regional specialized meteorological centers (RSMCs) and Tropical Cyclone Warning Centres (TCWCs) in every ocean basin across the world. • There are six RSMCs in the world that also includes the India Meteorological Department (IMD), and a total of five TCWCs.
- As an RSMC, the IMD names the cyclones which develop over the north Indian Ocean, including the Bay of Bengal and Arabian Sea, after following a standard procedure.
- The IMD is also mandated to issue advisories to 12 other countries in the region on the development of cyclones and storms.
- The list of 169 cyclone names is released by IMD, which provides the names of the cyclones and has 13 suggestions from each of the 13 countries.

S66. Ans.(b)

Sol. BepiColombo is a joint mission of the European Space Agency (ESA) and the Japan Aerospace Exploration Agency (JAXA) to the planet Mercury. The mission comprises two satellites launched together: the Mercury Planetary Orbiter (MPO) and Mio (Mercury Magnetospheric Orbiter, MMO).[5] The mission will perform a comprehensive study of Mercury, including characterization of its magnetic field, magnetosphere, and both interior and surface structure. It was launched on an Ariane 5 rocket on 20 October 2018, with arrival at Mercury planned for 5 December 2025,

S67. Ans.(a)

Sol. Tropical cyclones generally have been moving westward by about 30 kilometers per decade since 1982, putting them closer to land and making them more dangerous.

- Each decade since the 1980s, an additional two cyclones have come within 200 kilometers of land, the study found.
- But, unlike other areas, the Atlantic hurricane basin didn't show any significant westward shift.
- It may be due to the fact that the Atlantic hurricane zone is more closely surrounded by continents.

Tropical Cyclone

- It is a rotating low-pressure weather system that has organized thunderstorms but no fronts (a boundary separating two air masses of different densities).
- It originates over tropical or subtropical waters and has a closed low-level circulation.
- Tropical cyclones rotate counterclockwise in the Northern Hemisphere.

S68. Ans.(d)

Sol. Arcuate Delta and Cuspate Delta both are fluvial depositional landforms.

- Arcuate Delta: These Deltas resemble the arc of a circle. This is the most common shape of the delta found across the world. The distributaries of the main river spread the load in large proportion as they arrive close to the sea and the deposited material coalesces to give a triangle-like appearance. The Nile Delta is an ideal example of the arcuate delta. It is also an example of a wave-dominated delta. It has barriers that enclose several lagoons. Niger delta, Ganga delta, Rhone delta, Indus delta, and Po delta are all examples of arcuate delta'
- Cuspate Delta: Cuspate delta gives a pointed tooth-like appearance. It is formed on a straight shoreline where waves are in a predominant position modifying regularly the deposited sediments by redistributing them along the shoreline. The site of the river meets the ocean and looks like a protrusion in the water. Tiber River forms a cuspate delta at its mouth

S69. Ans.(b)

Sol. Estuarine Delta: It is formed at the mouth of submerged rivers depositing down the sides of the estuary. For example, the Seine River of France, the Deltas of Narmada, and the Tapi (formerly Tapti) rivers of India.

S70. Ans.(a)

- **Sol.** There are four main types of deltas classified by the processes that control the build-up of silt: wave-dominated, tide-dominated, Gilbert deltas, and estuarine deltas.
- In a wave-dominated delta, the movement of waves controls a delta's size and shape. The Nile delta (shaped by waves from the Mediterranean Sea) and Senegal delta (shaped by waves from the Atlantic Ocean) are both wave-dominated deltas.
- Gilbert deltas are formed as rivers deposit large, coarse sediments. Gilbert deltas are usually confined to rivers emptying into freshwater lakes. They are usually steeper than the normal flat plain of a wave-dominated or tide-dominated delta. This type of delta was first identified by the geologist Grove Karl Gilbert, who described mountain streams feeding ancient Lake Bonneville. (Utah's Great Salt Lake is the only remnant of Lake Bonneville.)
- Estuarine deltas form as a river that does not empty directly into the ocean but instead forms an estuary. An estuary is a partly enclosed wetland that features a brackish water (part-saltwater, part-freshwater) habitat. The Yellow River forms an estuary, for instance, as it reaches the Bohai Sea off the coast of northern China.
- tide-dominated deltas usually form in areas with a large tidal range or area between high tide and low tide. The massive Ganges-Brahmaputra delta, in India and Bangladesh, is a tide-dominated delta, shaped by the rise and fall of tides in the Bay of Bengal.

S71. Ans.(c)

Sol. Farm forestry is a term applied to the process under which farmers grow trees for commercial and non-commercial purposes on their farm lands. Forest departments of various states distribute seedlings of trees free of cost to small and medium farmers. Several lands such as the margins of agricultural fields, grasslands and pastures, land around homes and cow sheds may be used for raising trees under non-commercial farm forestry.

S72. Ans.(b)

Sol. Using biofloc, a new technology that obviates the need for the use of plankton in aquaculture, the feed, called Nutrifloc, and has been developed. "We balance the carbon-nitrogen ratio in the water due to which certain microbes develop. These microbes help maintain the quality of the water and reduce formation of sludge". The technology reduces the use of water, which earlier had to be changed on a regular basis, brings down power consumption and cuts the cost of feed. With the adoption of the technology, aquaculture can be done indoors as well since sunlight would be required only for those using plankton.

S73. Ans.(d)

Sol. Statement 1 is incorrect.

The possibility of an earthquake is very low because of the stable landmass.

The volcanic basalt beds of the Deccan were laid down in the massive Deccan Traps eruption which occurred towards the end of the Cretaceous period between 67 and 66 million years ago.

Some paleontologists speculate that this eruption may have accelerated the extinction of the dinosaurs.

Layer after layer was formed by the volcanic activity that lasted many thousands of years and when the volcanoes became extinct they left a region of highlands with typically vast stretches of flat areas on top like a table. The volcanic hotspot that produced the Deccan traps is hypothesized to lie under the present-day island of Réunion in the Indian Ocean.

Block Mountains

Block mountains are created when large areas or blocks of earth are broken and displaced vertically. The uplifted blocks are termed as horsts and the lowered blocks are called graben. The Great African Rift Valley (valley floor is graben) The Rhine Valley and the Vosges mountain in Europe are examples. Block mountains are also called fault-block mountains since they are formed due to faulting as a result of tensile and compressive forces. Block mountains are surrounded by faults on either side of rift valleys or grabens.

S74. Ans.(d)

Sol. The Commission for Agricultural Costs & Prices (CACP) is an attached office of the Ministry of Agriculture and Farmers Welfare is mandated to recommend minimum support prices (MSPs) to incentivize the cultivators to adopt modern technology, and raise productivity and overall grain production in line with the emerging demand patterns in the country. CACP submits its recommendations to the government in the form of Price Policy Reports every year, separately for five groups of commodities namely Kharif crops, Rabi crops, Sugarcane, Raw Jute and Copra. As of now, CACP recommends MSPs of 23 commodities, which comprise 7 cereals (paddy, wheat, maize, sorghum, pearl millet, barley and ragi), 5 pulses (gram, tur, moong, urad, lentil), 7 oilseeds (groundnut, rapeseed-mustard, soyabean, seasmum, sunflower, safflower, nigerseed), and 4 commercial crops (copra, sugarcane, cotton and raw jute). The Cabinet Committee on Economic Affairs (CCEA) of the Union government takes a final decision on the level of MSPs and other recommendations made by CACP.

S75. Ans.(b)

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

1. The air in contact with the earth rises vertically on heating in the form of currents and further transmits the heat of the atmosphere. This process of vertical heating of the atmosphere is known as convection. The convective transfer of energy is confined only to the troposphere.

2. The transfer of heat through the horizontal movement of air is called advection. The horizontal movement of the air is relatively more important than the vertical movement. In middle latitudes, most diurnal (day and night) variations in daily weather are caused by advection alone. In tropical regions particularly in northern India during the summer season local winds called 'loo' is the outcome of the advection process.

S76. Ans.(c)

Sol. It lies along Pangong Tso are the two major areas of concern in the ongoing standoff along the Line of Actual Control (LAC) in eastern Ladakh.

Despite the strategic importance of the Depsang Plains, the series of military talks held so far have focussed on the standoff areas at Galwan, Gogra Hotsprings, and Finger area of Pangong Tso. Depsang is one of the few places on the LAC where tank maneuvers are possible. During the 1962 war, Chinese troops occupied the Plains. In 2013, Chinese troops came 19 km inside and pitched tents resulting in a 21-day standoff.

S77. Ans.(b)

Sol. Statement 2 and 4 are incorrect. There should not be extensive deposition in the middle stage e.g. presence of a lake in between or a high evaporation rate (first). The velocity of a river must be sufficiently low to allow most of its load to be deposited in the river's mouth.

EXPLANATION-

The following are necessary conditions for the formation of a river delta

The river must have a large load. This will be possible if there is active erosion in the upper and middle stages.

There should not be extensive deposition in the middle stage e.g. presence of a lake in between or a high evaporation rate (first).

The river's load must be deposited faster than it can be removed by the action of currents and tides i.e no strong current should be at a right angle to the mouth of the river. Presence of shallow adjoining sea or continental shelf.

The velocity of a river must be sufficiently low to allow most of its load to be deposited in the river's mouth.

S78. Ans.(b)

Sol. Statement 1 is not correct: Meander is not a landform but is only a type of channel pattern. In large flood and delta plains rivers rarely flow in straight courses. Loop-like channel patterns meander develop over flood and delta plains. These are associated with rivers in the old stage.

Statement 2 is correct: Following factors play important role in the formation of meanders:

(i) the propensity of water flowing over very gentle gradients to work laterally on the banks

(ii) unconsolidated nature of alluvial deposits making up the banks with many irregularities which can be used by water exerting pressure laterally;

(iii) Coriolis force acting on the fluid water deflecting it like it deflects the wind.

TEST SERIES
ENGLISH

AAI 2023
Junior Executive
ATC

50+ TOTAL TESTS

S79. Ans.(c)

Sol. Pair 1 is not correctly matched: Hamada is a rocky desert. This consists of large stretches of bare rocks swept clear of sand and dust by the wind. The exposed rocks are thoroughly smoothed and polished. The region is bare and sterile.

Pair 2 is correctly matched: Reg or stony desert. This is composed of extensive sheets of angular pebbles and gravels which the winds are not able to blow off. In Libya and Egypt the term serir is used; elsewhere in Africa stony deserts are called reg.

Pair 3 is not correctly matched: Erg or sandy desert. This is a sea of sand that typifies the popular idea of desert scenery. Winds deposit vast stretches of undulating dunes in the heart of the deserts. The intricate patterns of ripples on the dune surfaces indicate the direction of the winds.

S80. Ans.(d)

Sol. All are correct.

Typhoons: China Sea

Hurricanes: West Indian Islands in the Caribbean

Tornadoes: Guinea lands of West Africa

Willy-Willies: North Western Australia

S81. Ans.(b)

Sol. The IPCC report shows that the number of cyclones in the Arabian Sea before and after the monsoon has increased over the years and is attributed to climate change. The Bay of Bengal and the Arabian Sea generate only 7 per cent of the world's cyclones. However, their impact are huge as some of the most densely populated regions of the world, including some mega-cities, are susceptible

S82. Ans.(d)

Sol. Mauna Loa is one of five volcanoes that together make up the Big Island of Hawaii, which is the southernmost island in the Hawaiian archipelago. It's not the tallest (that title goes to Mauna Kea) but it's the largest and makes up about half of the island's land mass. It sits immediately north of Kilauea volcano, which is currently erupting from its summit crater. Mauna Loa last erupted 38 years ago. Mount St. Helens is an active stratovolcano located in Skamania County, Washington, in the Pacific Northwest region of the United States

S83. Ans.(b)

Sol. The gas in the magma of Hawaii's volcanoes tends to escape, and so lava flows down the side of their mountains when they erupt. Hawaii's volcanoes are called shield volcanoes because successive lava flows over hundreds of thousands of years build broad mountains that resemble the shape of a warrior's shield. Shield volcanoes are also found in California and Idaho as well as Iceland and the Galapagos Islands. Alaska's Wrangell-St. Elias National Park has eight shield volcanoes including Mount Wrangell. Volcanoes like Mount St. Helens are called composite or stratovolcanoes. Their steep, conical slopes are built by the eruption of viscous lava flows and rock, ash and gas. Japan's Mount Fuji is another example of a composite volcano. How do scientists monitor Mauna Loa? Scientists use tiltmeters to track long-term changes in the tilting of the ground, helping them identify when the ground is swelling or deflating. A rapid change in tilt can indicate when an eruption will occur. There's also a thermal webcam at Mauna Loa's summit that will identify the presence of heat. And satellite radar can keep track of ground swelling and deflation

S84. Ans.(b)

Sol. Footloose industry is a general term for an industry that can be placed and located at any location without effect from factors such as resources or transport. These industries often have spatially fixed costs, which means that the costs of the products do not change despite where the product is assembled. Diamonds and computer chips are some examples of footloose industries. These industries can be located at a wide variety of places, as these are not weight-losing nor raw-material-specific. These are generally not polluting industries.

S85. Ans.(a)

Sol. A complex volcano, also called a compound volcano, is defined as one that consists of a complex of two or more vents, or a volcano that has an associated volcanic dome, either in its crater or on its flanks. A complex volcano does not rise from the ground as a distinct, singular dome but consists of multiple stratovolcanoes (volcanoes susceptible to explosive eruptions), conical hills and craters of all shapes and sizes.

S86. Ans.(d)

Sol.



S87. Ans.(c)

Sol.



S88. Ans.(a)

Sol. The first detailed theory of continental drift was proposed by Alfred Wegener in 1912. With the help of large geologic and paleontological data, Wegener put forward that throughout most of geologic time period, there was only one continent, that is called Pangea. In the Triassic Period, Pangea got fragmented, and the parts began to separate and move from one another.

According to Wegener, the drift was in two directions: ○ Equatorwards due to the interaction of forces of gravity, pole-fleeing force (due to centrifugal force caused by Earth's rotation) and buoyancy, and ○ Westwards due to tidal currents and this is because of Earth's motion (According to Wegener, since Earth rotates from west to east, the tidal currents act from east to west). ○ Wegener suggested that tidal force (gravitational pull of Moon and to a lesser extent, Sun) also played a major role. ○ The polar-fleeing force relates to the rotation of Earth. The shape of Earth is not a perfect sphere; there is a bulge at the equator. The rotation of Earth causes this bulge.

S89. Ans.(a)

Sol. The name of the cyclone — 'Jawad' — was proposed by Saudi Arabia.

How cyclones are named?

In 2000, the World Meteorological Organisation (WMO) agreed to start assigning names for cyclones over the North Indian Ocean basin using a list of names suggested by the countries surrounding the ocean basin

What is a cyclone?

Tropical Cyclone is any large system of winds that circulates about a center of low atmospheric pressure in a counter-clockwise direction north of the Equator and a clockwise direction to the south

Almost 90 percent of these storms form within 20° north or south of the [Equator](#). Poleward of those latitudes, sea surface temperatures are too cool to allow tropical cyclones to form, and mature storms moving that far north or south will begin to dissipate

S90. Ans.(c)

Sol. Tibetan High is a warm anticyclone (in this wind are changing in a clockwise direction in the Northern Hemisphere and it will have always outflow of winds) located over the Tibetan Plateau (center latitude at 28°n, longitude 98°e) in the middle/upper troposphere during the monsoon period.

S91. Ans.(c)

Sol. The plates act like a hard and rigid shell compared to Earth's mantle. This strong outer layer is called the lithosphere. Plate tectonics is the modern version of continental drift, a theory first proposed by scientist Alfred Wegener in 1912. Wegener didn't have an explanation for how continents could move around the planet, but researchers do now. Plate tectonics is thus said to be the unifying theory of geology. The driving force behind plate tectonics is convection in the mantle. Hot material near the Earth's core rises, and colder mantle rock sinks. In terms of analogy, it is kind of a pot boiling on a stove. The convection drive plates tectonics through a combination of pushing and spreading apart at mid-ocean ridges and pulling and sinking downward at subduction zones.

S92. Ans.(c)

Sol. Plates are divided between major and minor plates based on their geographical coverage. The Indian plate is thus a major plate. So, (a) is correct. The subduction zone along the Himalayas forms the northern plate boundary in the form of continent convergence. So, (b) is correct. The peninsular plate is an integral part of the Indian plate. So, (c) is incorrect. In the east, it extends through the Rakinyoma Mountains of Myanmar towards the island arc along the Java Trench. The Western margin follows the Kirthar Mountain of Pakistan. So, (d) is correct

S93. Ans.(b)

Sol. The lithosphere is broken into a number of plates known as the Lithospheric plates. The molten magma inside the earth moves in a circular manner. These plates move because of the movement of the molten magma inside the earth. Lateral movements between lithospheric plates create transform faults at the sites of plate slippage.

S94. Ans.(c)

Sol. Iron makes up 5 percent of Earth's crust and is second in abundance to aluminum among the metals and fourth in abundance behind oxygen, silicon, and aluminum among the elements. Iron, which is the chief constituent of Earth's core, is the most abundant element in Earth as a whole (about 35 percent) and is relatively plentiful in the Sun and other stars. In the crust the free metal is rare, occurring as terrestrial iron

S95. Ans.(b)

Sol. The most common chemical elements in the crust are oxygen (46.6%), silicon (27.7), aluminum (8.1), iron (5.0), calcium (3.6), potassium (2.8), sodium (2.6), and magnesium (2.1). Typical mantle rocks have higher magnesium to iron ratio and a smaller proportion of silicon and aluminum than the crust. The solid, inner core of the earth is iron and has a radius of about 760 miles. It is surrounded by a liquid, outer core composed of a nickel-iron alloy.

S96. Ans.(a)

Sol. The pre-dominant vegetation of this Siberian "sub-Arctic" type of climate is evergreen coniferous forest. It stretches in a great, continuous belt across North America, Europe and Asia. The greatest single band of coniferous forest is the Taiga in Siberia. There are small patches of coniferous forests in European countries like Germany due to the high altitude.

S97. Ans.(b)

Sol. The Eastern Ghats run from West Bengal state in the north, through Odisha and Andhra Pradesh to Tamil Nadu in the south passing some parts of Karnataka. Option A: Chambal forms part of the Gangetic drainage system, so it can't cut Eastern Ghats which are not spread till the Ganges drainage system. They are eroded and cut through by the four major rivers of peninsular India, known as the Godavari, Mahanadi, Krishna, and Kaveri. The Eastern Ghats are a discontinuous range of mountains along India's eastern coast. The mountain ranges run parallel to the Bay of Bengal. The Deccan Plateau lies to the west of the range, between the Eastern Ghats and Western Ghats. The coastal plains, including the Coromandel Coast region, lie between the Eastern Ghats and the Bay of Bengal. The Eastern Ghats are not as high as the Western Ghats.

S98. Ans.(d)

Sol. The highest temperature is not recorded at the equator but slightly towards the north of it. The average annual temperatures for the northern and southern hemispheres are around 19° C and 16° C respectively. This variation is due to the unequal distribution of land and water in the northern and southern hemispheres.

S99. Ans.(c)

Sol. The Bay of Bengal branch strikes the coast of Myanmar and part of southeast Bangladesh. But the Arakan Hills along the coast of Myanmar deflect a big portion of this branch towards the Indian subcontinent. **Hence statement 1 is correct.**

• The monsoon, therefore, enters West Bengal and Bangladesh from the south and southeast instead of from the south-westerly direction. From here this branch splits into two under the influence of the Himalayas and the thermal low in northwest India. It's one branch that moves westward along the Ganga plains reaching as far as the Punjab plains. The other branch moves up the Brahmaputra valley in the north and the northeast causing widespread rains. Its sub-branch strikes the Garo and Khasi Hills of Meghalaya. Mawsynram located on the crest of Khasi hills receives the highest average annual rainfall in the world. **Hence statement 2 is correct.**

S100. Ans.(b)

Sol. **El Nino** is the name given to a slight warming of the surface waters of the Pacific. It is the opposite of La Nina, which is cooling. As the ocean is one of the biggest influences on our weather, both of the phenomena have a dramatic effect on the weather around the globe.

To explain what happens during an El Nino event, we need to know what happens 'normally', at a time when there is no El Nino or La Nina. The warmest part of the Pacific Ocean is the region near the equator. Due to the spinning of the earth, the prevailing winds flow from east to west. This pushes the warm waters westwards, towards Indonesia.

In the east, around the coast of South America, cool waters would normally well up. These waters are rich in nutrients and fish and provide plenty of food for the Peruvian Fisherman. During an El Nino event, the prevailing winds across the Pacific weaken, and sometimes they can even reverse and blow the other way. This allows some of the warmer waters to move eastwards, away from Indonesia and towards South America.

El Nino has some effects that are easy to explain; for example, as the waters near the coast of South America are warmer than usual, it makes sense that the weather in the region is also warmer than usual. This will increase evaporation and therefore the region will also see more rain than in a typical year. It also is intuitive that because the warmer waters are moving away from Indonesia, the weather here is drier than usual.

