



*Drishti IAS Presents...*

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## **GEOGRAPHY** (March 2022 – March 2023)



Detailed  
Explanation

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1. Ans: C

Exp:

- **Continental drift theory deals with the distribution of the oceans and the continents.** It was first suggested by a German meteorologist, **Alfred Wegener in 1912.** Hence, **statement 1 is not correct.**
- According to the theory, **all the continents formed a single continental mass- Pangea and mega ocean- Panthalassa surrounded it.** Hence, **statement 3 is correct.**
- Around 200 million years ago Pangea started splitting and broke down into two large continental masses as **Laurasia and Gondwanaland** forming the northern and southern components respectively.
- Subsequently, Laurasia and Gondwanaland continued to break into various smaller continents that exist today.
- **Wegener didn't have a correct explanation for how continents could move around the planet.**
  - ◆ Wegener suggested that perhaps the rotation of the Earth caused the continents to shift towards and apart from each other. Today, we know that the continents rest on massive slabs of rock called tectonic plates. Hence, **statement 2 is not correct.**

2. Ans: C

Exp:

- The Mahanadi River system is the **third largest of peninsular India after Godavari and Krishna.** Hence, **statement 1 is correct.**
- It is the **largest river of Odisha state.** Hence, **statement 2 is not correct.**
- The catchment area of the river extends to Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.
- Its **basin is bounded by the Central India hills on the north, by the Eastern Ghats on the south** and east and by the Maikala range in the west. Hence, **statement 3 is correct.**

3. Ans: D

Exp:

**State of Dams in India:**

- India is ranked **3rd in the world** in terms of building large dams.
- India has 4,407 large dams, the **third highest number in the world after China (23,841) and the USA (9,263).** Hence **statement 1 is not correct.**
  - ◆ The number of such dams, in India, will increase to 4,400 by 2050.

- Almost half of the large dams in the country were built in the two decades of 1970-90. **Maharashtra has the maximum number of large dams** in the country (1845) followed by **Madhya Pradesh (905) and Gujarat (666).**
- **Kallanai Dam** in Tamil Nadu is the **oldest dam of India.** It is built on the Kaveri River and is about 2000 years old. Hence **statement 2 is not correct.**

- ◆ **Tehri Dam** in Uttarakhand is the **highest dam** in India built on Bhagirathi River.

- ◆ **Hirakud Dam** in Odisha built on river Mahanadi is the **longest dam** of India.

- **The Chopra committee**

- ◆ The committee was appointed by the Ministry of Environment and Forests and Climate Change, (MoEFCC) in October 2013.

- ◆ The **committee** suggested that **no hydroelectric power projects (HEPs) should be built in the paraglacial region** as it has loose glacial debris which when carried downstream can be disastrous.

- ◆ It also **raised objections to the construction of HEPs in regions 2200-2500 metres above sea level.**

4. Ans: C

Exp:

- State-run explorer Oil and Natural Gas Corporation (ONGC) will be participating to generate electricity through Geothermal Energy at **Puga, a remote valley located in Ladakh**, off the road to Chumar on the de-facto border with China.

- ◆ **Puga Valley is situated in the Changthang Valley in the south-eastern part of Ladakh**, about 22 km away from the Salt Lake Valley. Hence, **option C is correct.**

- ◆ It is a region of great significance known for its natural beauty and geothermal activities.

- ◆ Puga is also visited for its hot sulphur spring.

5. Ans: A

Exp:

- **Alaknanda River:**

- ◆ It is one of the **headstreams of the Ganga.**

- ◆ It rises at the confluence and feet of the **Satopanth and Bhagirathi glaciers** in Uttarakhand.

- ◆ It meets the Bhagirathi River at Devprayag after which it is called the Ganga.

- ◆ Its main tributaries are the **Mandakini, Nandakini, and Pindar rivers.**

● **Godavari River:**

- ◆ The Godavari is the **largest Peninsular River system**. It is also called the **Dakshin Ganga**.
- ◆ Godavari river rises from **Trimbakeshwar near Nasik** in Maharashtra and flows for a length of about 1465 km before **outfalling into the Bay of Bengal**.
- ◆ The Godavari basin extends over states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha in addition to smaller parts in Madhya Pradesh, Karnataka and Union territory of Puducherry.
- ◆ **Pravara, Purna, Manjra, Penganga, Wardha, Wainganga, Pranhita** (combined flow of Wainganga, Penganga, Wardha), **Indravati, Maner** and the **Sabri**.

● **Therefore, option A is correct.**

6. Ans: B

Exp:

● **The Peninsular Rock Agama (Psammophilus dorsalis)** which is a **type of garden lizard**. Hence, **statement 1 is not correct**.

- ◆ This lizard is a large animal, strikingly coloured in orange and black.
- ◆ **They do not generate their own body heat**, so they need to seek warmth from external sources like a warm rock or a sunny spot on the wall. Hence, **statement 2 is correct**.

● **Geography:**

- ◆ It is majorly found in India (Asia).
- ◆ It has a strong presence in **southern India**.
- ◆ Indian states of **Tamil Nadu, Chhattisgarh, Kerala, Andhra Pradesh, Karnataka, Bihar** hosts the population of the lizard. Hence, **statement 3 is correct**.

● **Habitat:**

- ◆ It belongs to the **Precocial Species**.
- ◆ **Precocial species** are those in which the young are relatively mature and mobile from the moment of birth or hatching.

● **Protection Status:**

- ◆ IUCN Red List: **Least Concern**
- ◆ CITES: **N/A**
- ◆ Wildlife Protection Act 1972: **N/A**

7. Ans: C

Exp:

- **Inner Line Permits (ILP)** is a **document necessary for non-natives** to enter or remain in a state protected by the **ILP system**.

- **Manipur** is the **fourth state** to implement the **ILP regime**, following **Arunachal Pradesh, Nagaland, and Mizoram**.

- Outsiders, including persons from neighboring states, must obtain permission to enter these **northeastern states**.

- Hence, **option C is correct**.

8. Ans: D

Exp:



- The **Dead Sea** is **situated between Jordan & Israel**, Hence, **statement 1 is correct**.

- The **Dead Sea** has the **lowest elevation** and is the **lowest body of water on the surface of Earth**. Hence, **statement 2 is correct**.

- **Dead sea** is **extremely saline in nature** and it's also called **Salt Sea**, Hence, **statement 3 is correct**.

9. Ans: C

Exp:

- An **earthquake** in simple words is the **shaking of the earth**. It is a **natural event**.

- The **location below the earth's surface where the earthquake starts** is called the **hypocenter**, and the location directly above it on the surface of the earth is called the **epicenter**.

- Hence, **statement 1 is correct**.

- A special class of tectonic earthquake is sometimes recognized as volcanic earthquakes. However, these are confined to areas of active volcanoes.

◆ Earthquakes produced by stress changes in solid rock due to the injection or withdrawal of magma (molten rock) are called volcano earthquakes.

- Hence, statement 2 is correct.

10. Ans: D

Exp:



- The countries which share coastal boundary with Mediterranean Sea are Albania, **Algeria**, Bosnia and Herzegovina, Croatia, Cyprus, **Egypt**, France, **Greece**, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, **Tunisia**, and Turkey.
- All the given countries share coastal boundaries with the Mediterranean Sea. Hence, option D is correct.

11. Ans: C

Exp:

- A Shield volcano produces low viscosity, runny lava, it spreads far from the source and forms a volcano with gentle slopes. Hence, statement 1 is correct.
- Most of the shield volcanoes are formed from fluid and basaltic lava flows.
- Mauna Kea and Mauna Loa are shield volcanoes. Hence, statement 2 is correct
- They are the world's largest active volcanoes around the island of Hawaii.
- The Fukutoku-Okanoba Submarine Volcano erupted in the Pacific Ocean off the coast of Japan in 2021.

12. Ans: C

Exp:

- The Aravalli range stretches for a distance of about 720 km from Himmatnagar in Gujarat to Delhi, spanning Haryana and Rajasthan.

- The Aravallis dates back to 3.2 to 1.2 billion years ago, of shoving and pushing of tectonic plates and magma outpourings.

◆ Himalayas were formed when India rammed into Asia about 40 to 50 million years ago and its northward advance slowed by about half.

- This slowdown is interpreted to mark the beginning of the collision between the Eurasian and Indian continental plates, the closing of the former Tethys Ocean, and the initiation of Himalayan uplift.

◆ Therefore, Aravallis are older than Himalayas.

- Hence, statement 1 is not correct.
- It has been formed primarily of folded crust, when two convergent plates move towards each other by the process called orogenic movement.
- Guru Shikhar Peak on Mount Abu is the highest peak in the Aravalli Range (1,722 m). Hence, statement 2 is correct.
- The hidden limb of the Aravallis that extends from Delhi to Haridwar creates a divide between the drainage of rivers of the Ganga and the Indus. Hence, statement 3 is correct.

13. Ans: A

Exp:

- Sri Lanka is separated from India by a narrow channel of sea, formed by the Palk Strait and Gulf of Mannar.
- A strait is an oceanic landform connecting two seas or two other large areas of ocean.
- A bay is a recessed, coastal body of water that directly connects to a larger main body of water, such as an ocean, a lake, or even another bay.
  - ◆ A large bay is usually called a gulf, sea, sound, or bight.
  - ◆ A cove is a small, circular bay with a narrow entrance.
- The Strait of Malacca is a narrow stretch of water between the Malay Peninsula and the Indonesian island of Sumatra.
- The Kerch Strait is a strait in Eastern Europe. It connects the Black Sea and the Sea of Azov, separating the Kerch Peninsula of Crimea in the west from the Taman Peninsula of Russia's Krasnodar Krai in the east.
- Hence, option A is correct.

14. Ans: B

Exp:

- A Derecho is “a widespread, long-lived, straight-line windstorm” that is associated with a “band of rapidly moving showers or thunderstorms”. These result in ‘green sky’ due to light interacting with the huge amount of water they hold. Hence, statement 2 is correct.
- The name comes from the Spanish word ‘la derecha’ which means ‘straight’.
- Straight-line storms are those in which thunderstorm winds have no rotation unlike a tornado. These storms travel hundreds of miles and cover a vast area.
- It is a warm-weather phenomenon that generally occurs in June and July. Hence, statement 1 is not correct.
- The big raindrops and hail scatter away all but the blue wavelengths due to which primarily blue light penetrates below the storm cloud.
- This blue then combines with the red-yellow of the afternoon or the evening sun to produce green.

15. Ans: B

Exp:

Mekong River

- The Mekong River is the longest river in Southeast Asia, the 7th longest in Asia, and the 12th longest in the world. It has a length of about 4,350 km.
- Rising in southeastern Qinghai province, China (eastern part of Tibetan plateau), it flows through the eastern part of the Tibet Autonomous Region. Hence statement 1 is not correct.
- It forms part of the international border between Myanmar (Burma) and Laos, as well as between Laos and Thailand. The river then flows through Laos, Cambodia, and Vietnam before draining into the South China Sea south of Ho Chi Minh City.
- Vientiane, the capital of Laos, and Phnom Penh, the capital of Cambodia, both stand on its banks.
- About three-fourths of the drainage area of the Mekong lies within the four countries the river traverses on its lower course—Laos, Thailand, Cambodia, and Vietnam. Hence statement 2 is correct.

16. Ans: B

Exp: Only Uzbekistan and Kyrgyzstan shares boundaries with Tajikistan. Hence, option B correct.

Central Asia



17. Ans: C

Exp:

- The inner core, which is composed mainly of solid iron and nickel, is thought to rotate slightly faster than the rest of the Earth. Hence, statement 1 is correct.
- This has been inferred from the study of seismic waves and is thought to be caused by the Coriolis effect, which results from the Earth's rotation.
- This effect is caused by the centrifugal force that arises from rotation and causes the inner core to rotate faster than the rest of the planet.
- The inner core of the Earth is thought to be composed primarily of iron and nickel, with smaller amounts of other elements such as carbon, silicon, and sulfur.
- The boundary separating the inner core from the outer core is called the Bullen discontinuity, named after the British geophysicist, Dr. John Bullen who first identified it in the 1950s. Hence, statement 2 is correct.

18. Ans: D

Exp:

- Deep-sea mining is the process of retrieving mineral deposits from the deep seabed, the ocean below 200 metres and covers two-thirds of the total seafloor. Hence statement 1 is not correct.
- According to International Seabed Authority (ISA), an agency under the United Nations Convention on the Law of the Sea (UNCLOS) for monitoring all activities related to mineral resources in the deep sea, the international seabed is the area that lies beyond the limits of national jurisdiction and represents around 50% of the total area of the world's oceans. Hence statement 2 is not correct.



19. Ans: D

Exp:

- It is known as 'Ponni' in Tamil.
- It is a sacred river of southern India. It rises on **Brahmagiri Hill of the Western Ghats in southwestern Karnataka state**, flows in a southeasterly direction through the states of Karnataka and Tamil Nadu, and descends the **Eastern Ghats** in a series of great falls and drains into Bay of Bengal through Pondicherry. **Hence, statement 1 is not correct**
  - Some of its tributaries are Arkavathi, Hemavathi, Lakshmana Theertha, Shimsa, Kabini and Harangi. Teesta is the tributary of Brahmaputra.
- Hence, statement 2 is not correct.

20. Ans: B

Exp:

- Brahmaputra River** originates from the **Kailash Range of the Himalaya**. Hence, statement 1 is not correct.
- The **Brahmaputra River** is also known for its high sediment load, which can cause problems such as riverbank erosion and sedimentation in reservoirs.
- Majuli Island** the largest river island in the world, located in the **Brahmaputra River in Assam**. Hence, statement 2 is correct.

21. Ans: B

Exp:



- The Palk Strait is a narrow body of water that separates India and Sri Lanka. It connects the Bay of Bengal to the north with the Palk Bay to the south. **Hence, option B is correct.**

22. Ans: B

Exp:

**Ken-Betwa River Link Project:**

- Recently, the Ministry of Jal Shakti chaired a meeting on **Ken-Betwa Link Project (KBLP)**, stating that it is the

**"flagship" project** of the national government and it "is crucial for the water security and socio-economic development of Bundelkhand region".

- The **Ken-Betwa Link Project (KBLP)** is the river interlinking project that aims to transfer surplus water from the Ken River in Madhya Pradesh (MP) to Betwa in Uttar Pradesh (UP) to irrigate the **drought-prone Bundelkhand region**. Hence, statement 1 is not correct.
- The region spread across the districts of two states mainly Jhansi, Banda, Lalitpur and Mahoba districts of UP and Tikamgarh, Panna and Chhatarpur districts of MP.
  - The project involves building a **77-metre tall and a 2-km wide Dhaudhan dam (to be built within Panna Tiger Reserve)** and a 230-km canal.
- Ken-Betwa is **one of the 30 river interlinking projects** conceived across the country. Hence, statement 2 is correct.
  - It will not only accelerate water conservation by the construction of a multipurpose dam but will also produce 103 MW of hydropower and will supply drinking water to 62 lakh people.

23. Ans: B

Exp:

**Sutlej River:**

- It is the longest of the five tributaries of the Indus River that give the Punjab (meaning "Five Rivers") its name. It rises on the **north slope of the Himalayas in Lake La'nga in southwestern Tibet**.

**Beas River:**

- The Beas rises at an elevation of 14,308 feet at Rohtang Pass in Himachal Pradesh.

**Ravi River:**

- It rises in the **Himalayas in Himachal Pradesh (India)** and flows to the Pakistani border and along it for more than 80 km before entering Pakistan's Punjab province.

**Jhelum River:**

- It originates in the Indian state of Jammu and Kashmir, in the western Himalayas.
- Hence, option (b) is correct.

24. Ans: C

Exp:

- Bordering Countries (21 countries):** Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, and Turkey. Hence, option (c) is correct.

25. Ans: B

Exp:

- ◆ The polar vortex is an expanse of cold air that generally circles the Arctic and is characterized by a counterclockwise flow of air. The term "vortex" refers to this flow of air. **Hence, option B is correct.**

26. Ans: B

Exp:

- Chittagong Hill Tracts (CHT) of Bangladesh is a 13,000 sq. km hilly and forested area in south-eastern Bangladesh, bordering **India's Mizoram and Tripura** and Myanmar's Chin and Rohingya-inhabited Rakhine States. **Hence, option B is correct.**
- The pre-British CHT had self-governing chiefdoms and chieftaincies. The population of these groups was categorised either as the Khyongtha, tribes who live along the river banks, or the Tounghtha, tribes who live in the thick jungles of the hills.

27. Ans: B

Exp:



- Bordering Countries of the Red Sea are: **Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti**, **Hence, option B is correct.**

28. Ans: C

Exp:

- Air space, in international law, is the **space above a particular national territory**, treated as belonging to

the government controlling the territory. **Hence, statement 1 is correct.**

- It does not include outer space, which, under the Outer Space Treaty of 1967 is declared to be free and not subject to national appropriation. **Hence, statement 2 is correct.**
- The treaty, however, did not define the altitude at which outer space begins and air space ends.

29. Ans: C

Exp:

- Polaris, known as the North Star/Pole Star, is a very bright star (~2,500 times more luminous than the Sun) and is part of the constellation Ursa Minor (~323 LY away from the Earth). **Hence, statement 1 is correct.**
- Polaris is less than 1° away from the north celestial pole, almost in direct line with the Earth's rotational axis, therefore, it appears to sit motionless in the northern sky with all the other stars appearing to rotate around it. **Hence, statement 2 is correct.**

30. Ans: A

Exp:

- The Aravalli Range is located in western India and is one of the oldest fold mountains of the world, now forming residual mountains with an elevation of 300m. to 900m. **Hence, statement 1 is correct.**
- They stretch for a distance of 800 km. from Himmatnagar in Gujarat to Delhi, spanning Haryana, Rajasthan, Gujarat, and Delhi, the 692 kilometre (km). **Hence, statement 2 is not correct.**

31. Ans: A

Exp:

- It was set up in 1851 primarily to find coal deposits for the Railways. **Hence, statement 1 is correct.**
- Over the years, it has not only grown into a repository of geo-science information required in various fields in the country but has also attained the status of a geo-scientific organisation of international repute.
- The main functions of the GSI relate to creation and update of national geo-scientific information and mineral resource assessment.
- It is an attached office to the Ministry of Mines. **Hence, statement 2 is correct.**
- GSI, headquartered in Kolkata, has six regional offices located in Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata and state unit offices in almost all states of the country. **Hence, statement 3 is not correct.**

32. Ans: B

Exp:

- Mongolia is a landlocked country located in **East and Central Asia**. It is bordered by Russia to the north and China to the south, east and west. **Hence, statement 1 is not correct.**
- It is the world's second-largest landlocked country and the most sparsely populated country in the world. **Hence, statement 2 is correct.**
- The majority of the population still practices traditional nomadic herding, and Mongolia is home to a variety of ethnic groups, including Mongols, Kazakhs, and Tuvans.



33. Ans: B

Exp:

- **Inversion** in temperature refers to a **meteorological phenomenon** in which a layer of **warm air** is above a **layer of cooler air**, instead of the usual situation where warmer air is near the surface and **cooler air** is higher up in the **atmosphere**. **Hence, statement 1 is not correct.**
- **Fog** is formed when the **temperature** and **humidity** of the air reach a point where the **air becomes saturated** and **water vapor** condenses into tiny droplets.
- **Advection fog** can be formed as a result of a **temperature inversion**, where the **inversion layer** acts as a cap that **prevents the moist air from rising and cools**, causing the fog to form. **Hence, statement 2 is correct.**
- **Advection fogs** that form due to **temperature inversions** are usually **shallow and can persist for long periods of time**.

34. Ans: A

Exp:

- The **Zojila tunnel** will allow travel between **Srinagar** and **Ladakh** throughout the year. **Hence, statement 1 is correct.**

- It will provide **all-weather connectivity** with **Srinagar** allowing it to remain open to tourists all year round.
- The **Zojila tunnel** will be **India's longest road tunnel** and **Asia's longest bi-directional tunnel**. **Hence, statement 2 is not correct.**

35. Ans: C

Exp:

- Bauxite is an ore of aluminium. It is a rock **consisting mainly of hydrated aluminium oxides**.
  - ◆ The deposits of Bauxite are mainly associated with laterites and occur as capping on hills and plateaus, except in **coastal areas of Gujarat and Goa**.
  - ◆ Bauxite is primarily used to **produce alumina through the Bayer process**. **Hence, statement 1 is correct.**
- **Bauxite Distribution in India:**
  - ◆ **Reserves:** By States, **Odisha alone accounts for 51% of country's resources of bauxite followed by Andhra Pradesh (16%), Gujarat (9%), Jharkhand (6%), Maharashtra (5%) and Madhya Pradesh & Chhattisgarh (4% each) in 2019**. Major bauxite resources are concentrated in the East Coast bauxite deposits in Odisha and Andhra Pradesh.
  - ◆ **Production:** In terms of production, in 2020, **Odisha accounted for 71% of the total output followed by Gujarat (9%) and Jharkhand (6%)**. **Hence, statement 2 is correct.**

36. Ans: D

Exp:

Venus:

- It is named after the **Roman goddess of love and beauty**. It is the second planet from the Sun and sixth in the solar system in size and mass.
- It is the **second brightest natural object in the night sky after the Moon**. **Hence, statement 1 is correct.**
- Unlike the other planets in our solar system, **Venus and Uranus spin clockwise on their axis**.
- It is the hottest planet in the solar system because of the high concentration of carbon dioxide which works to produce **an intense greenhouse effect**. **Hence, statement 2 is correct.**
- A day on Venus is longer than a year. It takes Venus longer to rotate once on its axis than to complete one orbit of the Sun.
  - ◆ That's 243 Earth days to rotate once - the longest rotation of any planet in the Solar System - and



only 224.7 Earth days to complete one orbit of the Sun.

- Venus has been called **Earth's twin because of the similarities in their masses**, sizes, and densities and their similar relative locations in the solar system.
  - ◆ No planet approaches closer to Earth than Venus; at its nearest it is the closest large body to Earth other than the Moon.
  - ◆ Venus has 90 times the atmospheric pressure of Earth. **Hence, statement 3 is correct.**

37. Ans: D

Exp:

- The **Bosporus and Dardanelles straits**, also known as the **Turkish Straits or the Black Sea Straits**, connect the Aegean Sea and the Black Sea **via the Sea of Marmara**.
- It is the only passage through which the Black Sea ports can access the Mediterranean and beyond.
- Over three million barrels of oil, about 3% of the daily global supply, mostly produced in Russia, Azerbaijan, and Kazakhstan, pass through this waterway every day.
- The route also ships large amounts of iron, steel, and agricultural products from the Black Sea coast to Europe and the rest of the world.
- **Hence, option D is correct.**



38. Ans: D

Exp:

- **Magnetite** is the **finest iron ore** with a very high content of iron up to **72 percent**. It has **excellent magnetic qualities**, especially valuable in the electrical industry.
- **Hematite ore** is the most important **industrial iron ore** in terms of the quantity used but has a **slightly lower iron content than magnetite**. **Hence, statement 1 is not correct.**

- **Siderite** is **iron ore** with **maximum impurities**. It contains about **48 percent metallic iron content** in it. It is **brown in color**. It contains a **mixture of iron and carbon**. It is **low-grade iron ore**. **Hence, statement 2 is not correct.**
- **Limonite** contains about **30 to 40 percent metallic iron** in it. It is mostly **yellow in color**. It is **low-grade iron ore**.

39. Ans: C

Exp:

- The chain runs up along the **western coast of South and North America**, crosses over the **Aleutian Islands in Alaska**, runs down the **eastern coast of Asia** past **New Zealand** and into the **northern coast of Antarctica**. **Hence, statement 1 is correct.**
- The abundance of **volcanoes and earthquakes** along the **Ring of Fire** is caused by the amount of movement of **tectonic plates** in the area.
- Along much of the **Ring of Fire**, plates overlap at **convergent boundaries** called **subduction zones**. **That is, the plate that is underneath is pushed down, or subducted, by the plate above**. **Hence, statement 2 is correct.**

40. Ans: D

Exp:

- **Semeru** - also known as "**The Great Mountain**" - is the **highest volcano** in Java (Indonesia) and one of the most active.
- Indonesia, with the maximum number of active volcanoes in the world, is **prone to seismic upheaval** due to its location on the **Pacific's Ring of Fire**.
- **Semeru volcano** is also part of the **Island arcs** formed by the subduction of the **Indo-Australian plate** below **Sunda Plate** (part of the Eurasian Plate). The trench formed here is called the Sunda trench whose major section is the Java Trench. **Hence, option D is correct.**

41. Ans: B

Exp:

- Germany shares its 3,767-kilometre land border with **Denmark** to the north; the **Netherlands, Belgium, Luxembourg and France** to the west; **Switzerland and Austria** to the south; and the **Czech Republic and Poland** to the east.
- **Hence, option B is correct.**



42. Ans: B

Exp:

- Black soils are rich in iron, lime, calcium, potassium, aluminum and magnesium but deficient in nitrogen and phosphorus. Hence, statement 1 is not correct.
- Black soils are characterized by a thick, dark-colored soil horizon rich in organic matter.
- Black soil with high fertility is necessary for cotton to grow at its best.
- The majority of the Deccan Plateau is covered with black soil. Hence, statement 2 is correct.

43. Ans: B

Exp:

Cyclone Mandous:

- This cyclone may impact the Tamil Nadu and Puducherry coasts from 8th December 2022 onwards. Hence, statement 1 is not correct.
- Mandous is a slow-moving cyclone that often absorbs a lot of moisture, carries a humongous amount of rainfall and gains strength in the form of wind speeds.
- The name has been suggested by the United Arab Emirates. Hence, statement 2 is correct.
- India Meteorological Department's (IMD) predicted that the storm system may move in the west and northwestward directions and intensify into a depression by the evening of December 6.
  - ◆ It may subsequently strengthen further into a cyclone over southwest Bay of Bengal and move towards the Tamil Nadu and Puducherry coasts by the morning of December 8.

44. Ans: A

Exp:

- Four Bills, seeking to modify the Scheduled Tribes (ST) list in 4 States - Tamil Nadu, Karnataka, Himachal Pradesh and Chhattisgarh, were introduced in Lok Sabha via amendments proposed in the Constitution (STs) Order, 1950.
- The Bill Seeks To:
  - ◆ Add the Narikoravan and Kuruvikkaran hill tribes to the ST list of Tamil Nadu. Hence, option A is correct.
    - The Lokur Committee (1965), in its report, also recommended their inclusion in the list.
  - ◆ Introduce Betta-Kuruba as a synonym for the already categorised Kadu kuruba in the ST list of Karnataka.
  - ◆ Add a number of synonyms in Devanagiri script for the already categorised Bhariya Bhumia tribe in the ST list of Chhattisgarh.
    - As per the Ministry of Tribal Affairs, they are all part of the same tribe but had been kept out of the list just because they are pronounced and spelled their names differently.
  - ◆ Add Hattee community of Trans-Giri region in Sirmaur district to the ST list of Himachal Pradesh (after almost five decades).

Process of Inclusion in the ST List:

- Recommendation from State:
  - ◆ The process to include tribes in the ST list begins with recommendations from the respective State governments, which are then sent to the Tribal Affairs Ministry, which reviews and sends them to the Registrar General of India for approval.
- President's Assent: The final decision rests with the President (under Articles 342).
  - ◆ The inclusion of any community in the STs comes into effect only after the President assents to a Bill amending the Constitution (Scheduled Tribes) Order, 1950.

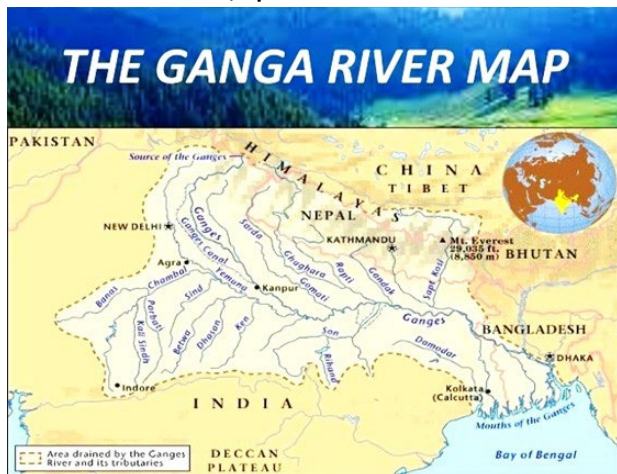
45. Ans: D

Exp:

- The Ganga rises in the Gangotri glacier in the Himalayas at an elevation of about 7,010 m in the Uttarkashi district of Uttarakhand. At its source, the river is called as the Bhagirathi. It descends down the valley upto Devprayag where after joining another hill stream

Alaknanda, it is called Ganga.

- The total length of river Ganga (measured along the Bhagirathi and the Hooghly) up to its outfall into Bay of Bengal is 2,525 km.
- The principal tributaries joining the river from right are the Yamuna and the Son. The Ramganga, the Ghaghra, the Gandak, the Kosi and the Mahananda join the river from left. **Hence, option D is correct.**



46. Ans: C

Exp:

- Narmada is the largest west flowing river of the peninsular region flowing through a rift valley between the Vindhya Range on the north and the Satpura Range on the south. **Hence, statement 1 is correct but statement 2 is not correct.**
- It rises from Maikala range near Amarkantak in Madhya Pradesh.
- **Major Tributaries:** Hiran, Orsang, the Barna and the Kolar.
- The major Hydro Power Projects in the basin are Indira Sagar, Sardar Sarovar etc. **Hence, statement 3 is correct.**

47. Ans: B

Exp:

- Western disturbances are **storms** that originate in the **Caspian or Mediterranean Sea**, and bring **non-monsoonal rainfall to northwest India**, according to the India Meteorological Department (IMD).
- **Hence, statement 1 is correct.**
- A Western Disturbance, labelled as an **extra-tropical storm** originating in the Mediterranean, is an **area of low pressure** that brings sudden showers, snow and

fog in northwest India.

- ◆ The moisture which WDs carry with them comes from the **Mediterranean Sea and/or from the Atlantic Ocean.**
- ◆ WD brings **winter and pre-monsoon rain** and is important for the development of the **Rabi crop in the Northern subcontinent.**
- **Hence, statement 3 is correct.**
- The disturbance **travels from the "western" to the eastern direction.**
  - ◆ These travel **eastwards on high-altitude westerly jet streams** - massive ribbons of fast winds traversing the earth from west to east.
- **Hence, statement 2 is not correct.**
- They gradually travel across the middle-east from Iran, Afghanistan and Pakistan to enter the Indian subcontinent.

48. Ans: C

- **Asteroid Ryugu is a diamond-shaped space rock. It is about 2,952 feet (900 metres) in diameter.**
- It was discovered in 1999 by the **Lincoln Near-Earth Asteroid Research (LINEAR)** project, a collaborative, U.S.-based project to catalogue and track space rocks.
- Ryugu is **orbiting the sun between Earth and Mars** and occasionally crosses Earth's orbit.
- **Therefore, option C is correct.**

49. Ans: D

Exp:

- The **Golden triangle** and **Golden crescent** are the major **opium** producing regions of the **world**. **Hence, statement 1 is not correct.**
- India is sandwiched between two largest **Opium producing regions** of the world that is the **Golden triangle** on one side and the **Golden crescent** on other.
- The **Golden Triangle** is located in the area where the borders of **Thailand, Myanmar and Laos** meet at the confluence of the **Ruak and Mekong Rivers**. **Hence, statement 2 is not correct.**

50. Ans: A

Exp:

- '**Aus**', '**aman**' and '**boro**' are crops of **rice** grown in **West Bengal**.
- India is the **second-largest producer of rice after China**.
- It is a **kharif crop** which requires **high temperature**, (above 25°C) and high humidity with annual rainfall



above 100 cm.

- In the areas of less rainfall, it is grown with the help of irrigation.
- Therefore, option A is correct.

51. Ans: D

Exp:

Recently, the famous Tal Chhapar Blackbuck Sanctuary in Churu, Rajasthan received a protective cover against a proposed move of the State government to reduce the size of its Eco Sensitive Zone (ESZ).



52. Ans: C

Exp

Persian Gulf:

- It is a shallow marginal sea of the Indian Ocean that lies between the Arabian Peninsula and southwestern Iran. The sea has an area of about 93,000 square miles (241,000 square km). Its length is some 615 miles (990 km), and its width varies from a maximum of about 210 miles (340 km) to a minimum of 35 miles (55 km) in the Strait of Hormuz.



- The countries that surround the Persian Gulf are: Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.

- Hence option C is correct.

53. Ans- B

Exp:

- A bomb cyclone is a large, intense midlatitude storm that has low pressure at its center. Hence, statement 1 is not correct.

◆ Storms form when a mass of low-pressure air (warm air mass) meets a high-pressure mass (cold air mass). The air flows from high pressure to low, creating winds.

- Bomb cyclones generally occur during colder months when the cold and warm air meets. Hence, statement 2 is correct.

54. Ans: A

Exp:

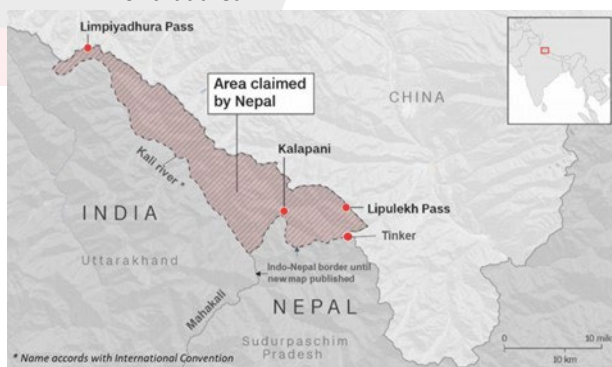
Border Dispute Between India and Nepal:

- Currently, India and Nepal have border disputes over Kalapani - Limpiyadhura - Lipulekh trijunction between India-Nepal and China and Susta area (West Champaran district, Bihar).

- Kalapani Region:

◆ Kalapani is a valley that is administered by India as a part of the Pithoragarh district of Uttarakhand. It is situated on the Kailash Mansarovar route.

◆ Kalapani is advantageously located at a height of over 20,000 ft and serves as an observation post for that area.



◆ The Kali River in the Kalapani region demarcates the border between India and Nepal.

◆ The Treaty of Sugauli signed by the Kingdom of Nepal and British India (after Anglo-Nepalese War) in 1816 located the Kali River as Nepal's western boundary with India.



- ◆ The discrepancy in locating the source of the Kali River led to boundary disputes between India and Nepal, with each country producing maps supporting their own claims.

- Hence, option A is correct.

55. Ans: A

Exp:

- Recently, the India-assisted **720 Megawatts Mangdechhu Hydroelectric Power Project (on Mangdechhu River)** was handed over to **Druk Green Power Corporation (DGPC), Bhutan**. The project was conceived in 2010.
- ◆ With this project, the two have successfully completed **4 mega hydroelectric power projects**. Cooperation in the hydropower sector between India and Bhutan is an example of mutually beneficial cooperation, providing clean electricity to India, generating export revenue for Bhutan.
- Hence, option A is correct.

56. Ans: B

Exp:

- The Houthis, on the other hand, are a political and religious group based in Yemen. They are considered as one of the largest minority groups in the region. They have played a **significant role in the ongoing civil war in Yemen** and have been in conflict with the government and other groups in the country. **Hence, statement 1 is correct.**
- The Kurds are one of the better-known ethnic minorities in the Middle East. They share a strong sense of culture and language and are considered indigenous to the Mesopotamian plains and the highlands in what is now **south-eastern Turkey**. **Hence, statement 2 is correct.**
- The Circassians are an ethnic group from the North Caucasus, an area in southwest Russia between the Black and Caspian seas, **Hence, statement 3 is not correct.**

57. Ans: B

Exp:

- Recently, the **Etalin hydroelectric project in Arunachal Pradesh** has been scrapped in its present form.
- ◆ The plan combined **two run-of-the-river schemes** with limited storage requiring concrete gravity dams on rivers **Tangon and Dri**. **Hence, option B is correct.**

58. Ans: A

Exp:

Mount Kilauea:

- Kilauea, also called **Mount Kilauea** ("Much Spreading" in Hawaiian), is located in **Hawaii Volcanoes National Park** on the **southeastern part of the island of Hawaii, US**.
- ◆ Kilauea's slopes merge with those of the nearby **volcano Mauna Loa on the west and north**.
- It is an **elongated dome built of lava eruptions from a central crater** and from lines of craters extending along east and southwest rifts, or fissures. The **volcano's 4,090-foot summit** has collapsed to **form a caldera**.
- ◆ A **caldera is a depression** created after a volcano partially collapses after releasing the majority of its magma chamber in an explosive eruption.
- Hence, option A is correct.

59. Ans: C

Exp:

- Recently, a **suspension bridge collapsed over the river Machchu**, in Gujarat's Morbi district, which killed almost 135 people.
- About Machchhu River:
  - ◆ The Machchhu river **originates from Madla hills in the Surendranagar district** of Gujarat and ends 141.75 km **downstream in the Rann of Kutch**.
  - ◆ Beti, Asoi, Jamburi, Benia, Machchhori, Maha are the tributaries of Machchhu river.
  - ◆ It has two dams to augment irrigation to alleviate droughts in Saurashtra.
- Hence, option C is correct.

60. Ans: C

Exp:



- Caspian Sea is bordered by Russia (northwest), Azerbaijan (west), Iran (south), Turkmenistan (southeast) and Kazakhstan (northeast).

● Hence, option (c) is correct.

61. Ans: C

Exp:

The countries that surround the Persian Gulf are: Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman (Musandam exclave) and Iran.



62. Ans: A

Exp:

- The Lamu Archipelago is located in the Indian Ocean, off the coast of Kenya in East Africa. Hence, option (a) is correct.

63. Ans: D

Exp:

- Mauna Loa is one of five volcanoes that together make up the Big Island of Hawaii, it is the southernmost island in the Hawaiian archipelago, Hence, statement 1 is correct.
- It's not the tallest (that title goes to Mauna Kea) but it's the world's largest volcano and makes up about half of the island's land mass. Hence, statement 2 is correct.
- Mauna Loa last erupted 38 years ago. Hence, statement 3 is correct.

64. Ans: D

Exp:

- The **hypocenter** of an **earthquake** is the point beneath the **Earth's surface** where the seismic energy is released. The **epicenter** of an earthquake is the point on the Earth's surface directly above the **hypocenter**. Hence, statement 1 is not correct.
- The **Mercalli scale** measures the **intensity** of an earthquake at a specific location, taking into account

the effects of the earthquake on the **local environment** and **human-made structures**. Hence, statement 2 is not correct.

- The **Richter scale** measures the **magnitude of an earthquake**, which is a measure of the **amount of energy** released by the **seismic event**.

65. Ans: B

Exp:

- Afghanistan has borders with the following countries: China, Iran, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. Hence, option B is correct.



66. Ans: D

Exp:

**Status of Steel Production in India:**

- **Production:** India is currently the **world's 2nd largest producer of crude steel**, producing 120 Million Tonnes (MT) crude steel during financial year 2021- 2022. Hence, statement 1 is correct.
- **Reserves:** More than 80% of the country's reserves are in the states of Odisha, Jharkhand, West Bengal, Chhattisgarh and the northern regions of Andhra Pradesh.
  - ◆ **Important steel-producing centers** are Bhilai (Chhattisgarh), Durgapur (West Bengal), Burnpur (West Bengal), Jamshedpur (Jharkhand), Rourkela (Odisha), Bokaro (Jharkhand). Hence, statement 3 is correct.
- **Consumption:** India is the **2nd largest consumer of finished steel** in 2021 (106.23 MT), preceded by China as the largest steel consumer as per World Steel Association. Hence, statement 2 is correct.

67. Ans: D

Exp:

- The Baltic Sea is surrounded by nine countries: Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Finland and Sweden. Hence, option D is correct.



68. Ans: D

Exp:

- A glacial lake outburst flood (GLOF) is a type of catastrophic flood that occurs when the dam containing a glacial lake fails, releasing a large volume of water.
- This type of flood is typically caused by rapid melting of glaciers or the buildup of water in the lake due to heavy precipitation or the inflow of meltwater.
- These floods can be triggered by a number of factors, including changes in the volume of the glacier, changes in the water level of the lake, and earthquakes. Hence, option D is correct.

69. Ans: D

Exp:

- P-Waves or the primary waves are also known as longitudinal or compressional waves. It can pass through solid, liquid and gas. Hence, statement 1 is not correct.
- P-waves travel at the fastest speed through solid materials. Though these also pass through liquid and gaseous materials their speed is slowed down.
- S-Waves or secondary waves are also called transverse or distortional waves. S-Wave cannot pass through liquid materials. It can only pass through solids. Hence, statement 2 is not correct.

70. Ans: D

Exp:

- Cyclonic conditions refer to a set of atmospheric conditions that are associated with the formation and intensification of cyclones.
- Cyclonic conditions typically include **low atmospheric pressure, high humidity and strong winds**, which can rotate around a **center of low pressure**. Hence, statement 1 is not correct.
- In the **Northern Hemisphere**, cyclonic winds rotate **counterclockwise** around a low-pressure center. Hence, statement 2 is not correct.
- In the Southern Hemisphere cyclonic winds rotate clockwise. The speed and direction of the winds can vary depending on the strength and location of the cyclone.

71. Ans: A

Exp:

Agasthyarkoodam is a **peak located in the Western Ghats of India**. It is one of the highest peaks in Kerala and is located in the southern part of the state.



- Hence, option A is correct.

72. Ans: B

Exp:

- Germany shares borders with nine countries, France, Luxembourg, Denmark, Belgium, Switzerland, Austria, Czech Republic, the Netherlands and Poland.
  - ◆ It is located in Central Europe, **bordering the Baltic Sea and the North Sea**.
- Hence, option B is correct.





73. Ans: A

Exp:

- Bordering Countries: Ukraine, Russia, Georgia, Turkey, Bulgaria and Romania. **Hence, option A is correct.**



74. Ans: C

Exp:

- The Kushiya River is a distributary river in Bangladesh and Assam.
- It emerges as a branch of the Barak River when the Barak separates into the Kushiya and Surma. **Hence, statement 1 is correct.**
- The Kushiya River that flows westward, creating the border between Assam, India, and the Sylhet District of Bangladesh. **Hence, statement 2 is correct.**
- India and Bangladesh have finalized the text of the Memorandum of Understanding (MoU) on interim water sharing of the Kushiya river.

75. Ans: D

Exp:

Geographical Indication (GI)

● About:

- ◆ **Geographical Indication (GI)** is an indication used to identify goods having special characteristics originating from a definite geographical territory.
- ◆ The Geographical Indications of Goods (Registration and Protection) Act, 1999 seeks to provide for the registration and better protection of geographical indications relating to goods in India.

● Validity:

- ◆ This tag is valid for a period of 10 years following which it can be renewed.

● Significance:

- ◆ Once a product gets this tag, any person or company cannot sell a similar item under that name. **Hence, statement 1 is correct.**
- ◆ GI registration of a product provides it legal protection and prevention against unauthorised use by others. **Hence, statement 2 is correct.**
- ◆ GI tag helps in promoting the exports of the product. **Hence, statement 3 is correct.**
- ◆ It also provides comfort to customers about the authenticity of that product.

● Hence, option D is correct.

76. Ans: C

Exp:

- **Commercial Plantation Crop:** Rubber is made from the latex of a tree called Hevea Brasiliensis. Rubber is largely perceived as a strategic industrial raw material and accorded special status globally for defence, national security and industrial development.
- **Conditions for Growth:** It is an equatorial crop, but under special conditions, it is also grown in tropical and sub-tropical areas. **Hence, statement 1 is correct.**
- **Temperature:** Above 25°C with a moist and humid climate. **Hence, statement 2 is not correct.**
- **Rainfall:** More than 200 cm.
- **Soil Type:** Rich well-drained alluvial soil.
- Cheap and adequate supply of skilled labour is needed for this plantation crop.
- **Major Producers Globally:** Thailand, Indonesia, Malaysia, Vietnam, China and India.
- **Major Consumers:** China, India, USA, Japan, Thailand, Indonesia and Malaysia. **Hence, statement 3 is correct.**



77. Ans: A

Exp:

- Bru or Reang is a community indigenous to Northeast India, living mostly in Tripura, Mizoram and Assam. **Hence, statement 1 is correct.**
- In Tripura, they are recognised as a Particularly Vulnerable Tribal Group. **Hence, statement 2 is not correct.**
- A landmark agreement was signed on 16th January 2020 to resolve the 23-year-old Bru-Reang refugee crisis by which more than 37,000 internally displaced people are being settled in Tripura.

78. Ans: A

Exp:

ASEAN

- It is a regional grouping that promotes economic, political, and security cooperation.
- It was established in August 1967 in Bangkok, Thailand with the signing of the ASEAN Declaration (Bangkok Declaration) by the founding fathers of ASEAN, namely Indonesia, Malaysia, Philippines, Singapore and Thailand.

Members:

- ASEAN brings together ten Southeast Asian states – **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam** – into one organisation.



- Hence, option A is correct.

79. Ans- D

Exp:

- **Indian Ocean Dipole** is defined by the difference in sea surface temperature between two areas (or poles,

hence a dipole) – a western pole in the Arabian Sea (western Indian Ocean) and an eastern pole in the eastern Indian Ocean south of Indonesia.

- ◆ **A positive IOD leads to greater monsoon rainfall and more active** (above normal rainfall) monsoon days in **Indian sub-continent**.

- **El Nino** refers to the large-scale ocean-atmosphere climate interaction linked to periodic warming in sea surface temperatures across the central and east-central Equatorial Pacific.

- ◆ El Nino events are associated with **weak monsoons** and lower than average rainfall.

- **La Nina** refers to the periodic cooling of ocean surface temperatures in the central and east-central equatorial Pacific.

- ◆ The La Niña has the opposite effect to the El Niño and is responsible for stronger monsoons and above-average rainfall.

- Therefore, option D is correct.

80. Ans: C

Exp:

- **Thamirabarani River** is a perennial river that flows through **Tirunelveli and Thoothukudi districts of the Tamil Nadu** state of southern India **into the Gulf of Mannar**.
- Recently, the **district administration of Tirunelveli** in Tamil Nadu along with **Ashoka Trust for Research in Ecology and the Environment (ATREE)**, a non-profit Organisation, are using a '**hyper local**' approach called **TamiraSES** to restore the Thamirabarani River.

81. Ans: A

Exp:

- Dibang river flows through Debang Valley in Arunachal Pradesh and finally debouches into the plains where it meets the Lohit River near Sadiya. The major tributaries of Dibang River are Dri, Mathun, Talon, Eme, Ahi, Emra and Awa.
- Dibang river is a tributary of Brahmaputra River.
- Hence, statement 1 is correct.
- Dibang River flows in the state of Arunachal Pradesh only.
- Hence, statement 2 is not correct.

82. Ans: C

Exp:

- **Saudi Arabia is bordered by:**
  - ◆ Jordan, Iraq, and Kuwait to the north

- ◆ Persian Gulf, Qatar, the United Arab Emirates, and Oman to the east
- ◆ A portion of Oman to the southeast
- ◆ Yemen to the south and southwest
- ◆ Red Sea and the Gulf of Aqaba to the west.



- Hence, option C is correct.

83. Ans: B

- Recently, nearly 100 people have been killed and scores injured in violent border clashes between Kyrgyzstan and Tajikistan.
- Kyrgyzstan shares border with Kazakhstan to the north, People's Republic of China to the southeast, Tajikistan to the southwest, and Uzbekistan to the west.



84. Ans: D

Exp:

- **Narikoravan and Kurivikkaran:**
  - ◆ Nomadic tribes like the Narikuravas and Kuruvikaras (jackal catchers and bird eaters) pride themselves on their traditional occupations of hunting and gathering.

- ◆ They live in **Tamil Nadu**.

● **Binjhia :**

- ◆ The Binjhia tribe live in **Chhattisgarh**.

● **'Betta-Kuruba:**

- ◆ The ST status granted to the Betta-Kuruba community as a synonym of Kadu Kuruba of Karnataka.

● **Hattis:**

- ◆ The Hattis are a **close-knit community** that got their name from their **tradition of selling homegrown vegetables, crops, meat, and wool, etc. at small markets called 'haat' in towns**.
- ◆ Hatti men traditionally don a distinctive white headgear on ceremonial occasions.
- ◆ The Hatti homeland **straddles the Himachal-Uttarakhand border** in the basin of the **Giri and Tons rivers**, both tributaries of the Yamuna.

85. Ans: D

Exp:

- Western Ghats consist of a chain of mountains running parallel to India's Western Coast and passing from the states of **Kerala, Maharashtra, Goa, Gujarat, Tamil Nadu and Karnataka**.
- **Significance of western ghats:**
  - ◆ The Ghats influence the Indian monsoon weather patterns that mediate the warm tropical climate of the region.
  - ◆ They act as a barrier to rain-laden monsoon winds that sweep in from the south-west.
  - ◆ Western Ghats are home to tropical evergreen forests, as well as to 325 globally threatened species.

86. Ans: C

Exp:

- The lake is situated in Mehrauli, Delhi and is claimed to be created by **Tomar King, Anangpal II**, in 1,060 AD.
- He is known to have established and populated Delhi in the 11th century.
- The millennium old Anang Tal signifies the beginning of Delhi.
- Anang Tal **has a strong Rajasthan connection as Maharaja Anangpal is known as nana (maternal grandfather) of Prithviraj Chauhan** whose fort Rai Pithora is on the list of the ASI.
- Hence, option C is correct.

87. Ans: B

Exp:

**The Mozambique channel:**

- The Mozambique Channel is **part of the Western Indian Ocean (WIO) sub-region**. The Channel's boundaries are not yet defined and may vary depending on the source.
- However, according to the **International Hydrographic Organization**, the channel's northern limit is a line joining River Rovuma's estuary to Ras Habu. Ile Grande Comore, on the Comoro archipelago, is the northernmost point.
- The eastern limit is on Madagascar's west coast, while the southern limit is a line joining Cap Sainte-Marie to Ponto do Ouro. The western limit is on the Southern African coast.
- The Mozambique Channel shares land borders with five countries, namely **Tanzania, Madagascar, Comoros, Mozambique, and France (through its territories)**.
- Hence option B is correct.



88. Ans: A

Exp:

- A tropical cyclone is an intense circular storm that originates over warm tropical oceans and is

characterized by low atmospheric pressure, high winds, and heavy rain.

- A characteristic feature of tropical cyclones is the eye, a central region of clear skies, warm temperatures, and low atmospheric pressure.
- The conditions favorable for the formation and intensification of tropical storms are:
  - ◆ **Large sea surface with temperature** higher than  $27^{\circ}\text{C}$ .
  - ◆ **Presence of the Coriolis force.**
  - ◆ **Small variations in the vertical wind speed.**
  - ◆ A pre-existing weak low- pressure area or low-level-cyclonic circulation.
  - ◆ Upper divergence above the sea level system.
- Hence, option A is correct.

89. Ans: B

Exp:

- Narmada is the **largest west flowing river of the peninsular region** flowing through a **rift valley between the Vindhya Range on the north and the Satpura Range on the south**. Hence, statement 1 is not correct but statement 2 is correct.
  - ◆ Narmada is flowing through the area where the land is not sloping towards the west from central India, but it is flowing west because of the rift valleys only.
- It rises from Maikala range near **Amarkantak in Madhya Pradesh**. Hence, statement 3 is correct.
  - ◆ It drains a large area in Madhya Pradesh besides some areas in the states of Maharashtra and Gujarat.
- The river near Jabalpur (Madhya Pradesh) forms the Dhuandhar Falls.
  - ◆ There are several islands in the estuary of Narmada of which Aliabet is the largest.
- **Major Tributaries:** Hiran, Orsang, the Barna and the Kolar.
- **Hydro Power Projects:** Indira Sagar, Sardar Sarova, Maheshwar etc.

90. Ans: C

Exp:

- The **Pacific Island Countries** are a cluster of **14 states** which are located largely in the **tropical zone of the Pacific Ocean** between **Asia, Australia and the Americas**. Hence, statement 1 is correct.
- The **Pacific Island Countries** lie in the natural line of expansion of **China's maritime interest and naval power**.



- They include **Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.** Hence, statement 2 is correct.

91. Answer: C

Exp:

- The **Koyna River is a tributary of the Krishna River** which originates in Mahabaleshwar, Satara district, Western Maharashtra.
- Unlike most of the other rivers in Maharashtra which flow in East-West direction, the **Koyna River flows in the North-South direction.**
- It covers an area of 2,036 km<sup>2</sup> in the Deccan terrain of the district of Satara in the state of Maharashtra.
  - ◆ With an elevation range of **550 – 1,460 m above mean sea level** it typically represents a physiographic setup characterized by the Deccan plateau in the Western Ghats region.
- It is dammed by the Koyna Dam at Koynanagar forming the **Shivsagar reservoir.**
- Koyna River is supported by four **tributaries.** They are **Kera, Wang, Morna and Mahind.** Among these rivers, Kera, Wang and Morna are dammed.
- Hence, option C is correct.

92. Ans: (d)

- **Banihal Pass** is a mountain pass across the Pir Panjal Range that connects the **Kashmir Valley** to the outer Himalayas and the plains to the south. Hence, pair 1 is correctly matched.
- **Rohtang Pass** connects the **Kullu Valley with the Lahaul and Spiti Valleys** of Himachal Pradesh, India. Hence, pair 3 is correctly matched.
- **Fotu La** is one of two high mountain passes between **Leh and Kargil.** Hence, pair 2 is correctly matched.
- **Zoji La Pass** is in the Zaskar range of Jammu & Kashmir. The **road route from Srinagar to Leh goes through this pass.** It has been created by the Indus River. Hence, pair 4 is correctly matched.
- Hence, option D is correct.

93. Ans: B

Exp:

- Wet bulb temperature (WBT) is the **lowest temperature to which air can be cooled by the evaporation of water** into the air at a constant pressure.
- WBT is a limit that considers **heat and humidity beyond** which humans can not tolerate high temperatures.

- The Wet Bulb temperature is the **temperature of adiabatic saturation.** This is the temperature indicated by a moistened thermometer bulb exposed to the air flow.

- An adiabatic process is one in which **no heat is gained or lost by the system.**

- Hence, option B is correct.

94. Ans: B

Exp:

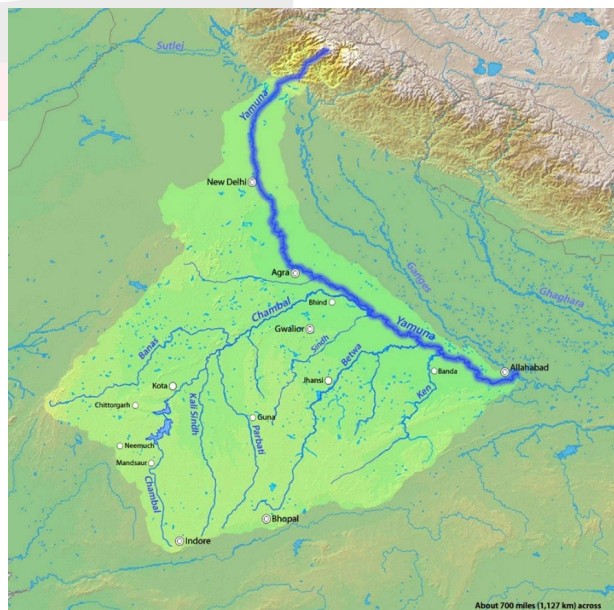
- **Bhakra Dam** is a **concrete gravity dam across the Sutlej River** and is near the **border between Punjab and Himachal Pradesh** in northern India. Hence, statement 1 is not correct but statement 2 is correct.
- It is India's second tallest at 225.55 m high next to the 261m Tehri Dam.
- Its reservoir, known as the "Gobind Sagar", stores up to 9.34 billion cubic meters of water.
- Nangal dam is another dam downstream of Bhakra dam. Sometimes both the dams together are called Bhakra-Nangal dam though they are two separate dams.

95. Ans: C

Exp:

Yamuna:

- **Source:** The river Yamuna, a **major tributary of river Ganges**, originates from the Yamunotri glacier **near Bandarpooch peaks in the Mussoorie range** of the lower Himalayas at an elevation of about 6387 metres above mean sea level in Uttarkashi district of Uttarakhand. Hence statement 1 is correct.





- **Basin:** It meets the Ganges at the Sangam (where Kumbh mela is held) in Prayagraj, Uttar Pradesh after flowing through Uttarakhand, Himachal Pradesh, Haryana and Delhi.
- **Length:** 1376 km
- **Important Dam:** Lakhwar-Vyasi Dam (Uttarakhand), Tajewala Barrage Dam (Haryana) etc.
- **Important Tributaries:** Chambal, Sindh, Betwa and Ken. Hence statement 2 is correct.

96. Ans: C

Exp:

**South-West Monsoon:**

- The climate of India is described as the 'monsoon' type. In Asia, this type of climate is found mainly in the south and the southeast.
- Out of a total of 4 seasonal divisions of India, **monsoon occupies 2 divisions, namely:**
  - ◆ **The southwest monsoon season** - Rainfall received from the southwest monsoons is seasonal in character, which occurs between June and September. Hence statement 1 is correct.
  - ◆ **The retreating monsoon season** - The months of October and November are known for retreating monsoons.
- The **Factors Influencing South-West Monsoon Formation** are:
  - ◆ The **differential heating and cooling of land and water** creates a low pressure on the landmass of India while the seas around experience comparatively high pressure.
  - ◆ 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. It is also known as the monsoon-trough during the monsoon season). Hence statement 2 is correct.
  - ◆ 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.
  - ◆ The **Tibetan plateau gets intensely heated during summer**, which results in strong vertical air currents and the formation of low pressure over the plateau at about 9 km above sea level.
  - ◆ 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.

- ◆ Tropical Easterly Jet (African Easterly Jet) and the Southern Oscillation (SO).

97. Ans: A

Exp:

**Patan Patola:**

Recently, Prime Minister of India gifted a '**Patan Patola**' scarf to the Prime Minister of Italy at the G20 summit.

- Patola is a double ikat woven fabric, usually made from silk in **Patan (North Gujarat)**.
  - ◆ Ikat is a method of **tie-dyeing the warp or weft before the cloth is woven**.
- It received a **Geographical Indication (GI) tag in 2013**. Hence, option 1 is correct.
- The ancient art of double ikat or Patola woven in pure silk **dates back to the 11th century**.
- This peculiar quality has its origins in an intricate and difficult technique of **dyeing or knot dyeing, known as 'bandhani', on the warp and weft separately before weaving**.
  - ◆ The Patola fabrics bear an **equal intensity of colours and design on both sides**.
- One of the major practitioners of this art form is the **Salvi family from Patan**.
- The other commonly worn Patola is the **Rajkot Patola, woven on a flat loom**.
- Before World War II, **Indonesia was the major buyer of Patolas**.

98. Ans: C

Exp:

- The GI is an indication **used to identify goods having special characteristics originating from a definite geographical territory**. Hence, statement 1 is correct.
- It is governed and directed by the **WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) and The Geographical Indications Of Goods (Registration and Protection) act, 1999**, Hence, statement 2 is correct.
- This tag is **valid for a period of 10 years following which it can be renewed**, Hence, statement 3 is not correct.
- Once a product gets this tag, no person or company can sell a similar item under that name.
- GI registration of a product provides it legal protection and prevention against unauthorised use by others.
- **GI tag helps in promoting the exports of the product**.
- It also provides comfort to customers about the authenticity of that product. Hence, statement 4 is correct.

99. Ans- C

Exp:

- Gondwana coal makes up to **98% of the total reserves** and 99 % of the production of coal in India. Hence, **statement 1 is correct.**
  - ◆ Gondwana coal forms **India's metallurgical grade** as well as superior quality coal.
- Tertiary coalfields are mainly confined to extra-peninsular regions.
  - ◆ Important areas include **Assam, Meghalaya, Nagaland, Arunachal Pradesh** and Jammu and Kashmir. Hence, **statement 2 is correct.**

100. Ans- C

Exp:

- **Persian Gulf countries are the major producers of crude oil and natural gas.**
- This commonality of interest has given rise to their **own prosperity and subsequently, economic-political entanglements** among them.
- The lands around the Persian Gulf are shared by eight countries- **Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates.**
- **Jordan does not lie around the Persian Gulf.**
- **Therefore, option C is correct.**



101. Ans- C

Exp:

- The **Arctic region has rich deposits of coal, gypsum and diamonds** and also substantial reserves of zinc, lead, placer gold and quartz. Hence, **statement 1 is correct.**
  - ◆ **Greenland** alone possesses about a quarter of the world's rare earth reserves.
- The **Arctic helps circulate the world's ocean currents**, moving cold and warm water around the globe. Hence, **statement 2 is correct.**

- ◆ Also, Arctic Sea ice acts as a huge white reflector at the top of the planet, bouncing some of the sun's rays back into space, helping keep the Earth at an even temperature.

102. Ans: B

Exp:

- They are a **set of seventeen metallic elements**. These include the fifteen lanthanides on the **periodic table** in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.
  - ◆ These minerals have **unique magnetic, luminescent, and electrochemical properties** and thus are used in many modern technologies, including consumer electronics, computers and networks, communications, health care, national defense, clean energy technologies etc. Hence, **statement 1 is not correct.**
- Though India has **6% of the world's rare earth reserves**, it only produces 1% of global output, and meets most of its requirements of such minerals from China. Hence, **statement 2 is correct.**

103. Ans- C

Exp:

- **Corals are marine invertebrates** or animals which do not possess a spine.
- In scientific classification, **corals fall under the phylum Cnidaria** and the class Anthozoa.
- Hard corals extract calcium carbonate from seawater to build hard, white coral exoskeletons. Hence, **statement 1 is correct.**
- They are the primary reef-building corals. Hard corals that form reefs are called hermatypic corals. Hence, **statement 2 is correct.**

104. Ans: B

Exp:

- The **Solomon Islands is part of the ethnically Melanesian group of islands in the Pacific**. Hence, **statement 1 is not correct.**
- It lies between Papua New Guinea and Vanuatu. Hence, **statement 2 is correct.**
- The islands were initially controlled by the British Empire during the colonial era.
- It went through the hands of Germany and Japan and then back to the U.K., after the Americans took over the islands from the Japanese during World War II.

- The islands became independent in 1978 to become a constitutional monarchy under the British Crown, with a parliamentary system of government.
- Still, the country, a member of the Commonwealth, is independent, and the governor-general is appointed on the advice of the unicameral National Parliament.

105. Ans: D

Exp:

Sutlej:

- It is the longest of the five tributaries of the Indus River that give the Punjab (meaning "Five Rivers") its name.
  - ◆ Jhelum, Chenab, Ravi, Beas and Satluj are main tributaries of Indus.
- It rises on the north slope of the Himalayas in **Lake La'nga in southwestern Tibet. Hence, statement 1 is correct.**
- Flowing northwestward and then west-southwestward through Himalayan gorges, it enters and crosses Himachal Pradesh before beginning its flow through the Punjab plain near Nangal.
  - ◆ Continuing southwestward in a broad channel, it receives the Beas River (and forms 65 miles of the India-Pakistan border before entering Pakistan and flowing another 220 miles to join the Chenab River west of Bahawalpur.
  - ◆ **Sutlej River meets the Beas River in Harike in the Ferozpur district before entering Pakistan. Hence, statement 2 is correct.**



- The combined rivers then form the Panjnad, the link between the Five Rivers and the Indus.
- **Luhri Stage-I Hydro Electric Project is located on River Satluj in Shimla and Kullu districts of Himachal Pradesh. Hence, statement 3 is correct.**



106. Ans: D

Exp:

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- The combined rivers then form the Panjnad, the link between the Five Rivers and the Indus.

- **Luhri Stage-I Hydro Electric Project** is located on River Satluj in Shimla and Kullu districts of Himachal Pradesh. Hence, **statement 3 is correct.**



107. Ans: C

Exp:

- Recently, the Baltic Pipe was launched, carrying gas from Norway to Poland, an effort by Poland to decrease its dependence on Russia for energy. It is **not an extension** of Nord Stream. Hence, **statement 1 is not correct.**
- Europe requires more than 100 billion cubic meters (bcm) of natural gas each year and around 40% of its gas comes from Russia. Nord Stream **increases Europe's dependence on Russia.** Hence, **statement 2 is not correct.**
- Nord Stream is a pair of offshore natural gas pipelines in Europe that runs under the **Baltic Sea from Russia to Germany.** It comprises the Nord Stream 1 pipeline running from Vyborg in northwestern Russia, near Finland, and the Nord Stream 2 pipeline running from Ust-Luga in northwestern Russia near Estonia. Hence, **statement 3 is correct.**

108. Ans: D

Exp:

**Persian Gulf - Physical Geography:**

- An arm of the Arabian Sea; between the southwestern Iran and the Arabian Peninsula.

- **Bordering Countries:** Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman (Musandam exclave) and Iran.

- Connected to the **Gulf of Oman** in the east **by the Strait of Hormuz.**

◆ The Strait of Hormuz is situated between Qeshm Island and the Iranian coast in the north and the Musandam Peninsula of the Arabian Peninsula in the south.

- Hence **option D is correct.**



109. Ans- A

Exp:

**Tropical Storms**

- The **Fujiwhara Effect** is any interaction between tropical storms formed around the same time in the same ocean region with their centres or eyes at a distance of less than 1,400 km, with intensity that could vary between a depression (wind speed under 63 km per hour) and a **super typhoon (wind speed over 209 km per hour).**
- The interaction could lead to changes in the track and intensity of either or both storm systems.
- In rare cases, the two **systems could merge**, especially when they are of similar size and intensity, to form a **bigger storm.**
- Hence, **option A is correct.**

110. Ans: B

Exp:

- **Blue Blob** is a cold patch located south of Iceland and Greenland in North Atlantic Ocean.
- The cold patch was most prominent during the winter of 2014-2015 when the sea surface temperature was about 1.4 degrees Celsius colder than normal.



- The Arctic region is reportedly warming four times faster than the global average and Iceland's glaciers steadily shrank from 1995 to 2010, losing an average of 11 billion tons of ice per year.
- Starting in 2011, however, the speed of Iceland's melting slowed, resulting in about half as much ice loss annually and the Blue Blob has been linked to cooler air temperatures over Iceland's glaciers and cooler waters.
  - ◆ This trend was not seen in nearby, larger glaciers across Greenland and Svalbard.
- Hence, option B is correct.

111. Ans: D

Exp:

- Western disturbances are **storms that originate in the Caspian or Mediterranean Sea, and bring non-monsoonal rainfall to northwest India**, according to the India Meteorological Department (IMD). Hence, **statement 1 is not correct.**
- The meaning of WD lies in its name.
- The disturbance **travels from the "western" to the eastern direction.**
- These travel eastwards on high-altitude **westerly jet streams** - massive ribbons of fast winds traversing the earth from west to east.
- Disturbance means an **area of "disturbed" or reduced air pressure.**
- Equilibrium exists in nature due to which the air in a region tries to normalise its pressure.
- A WD is associated with rainfall, snowfall and fog in northern India. It arrives with rain and snow in Pakistan and northern India. The moisture which WDs carry with them **comes from the Mediterranean Sea and/or from the Atlantic Ocean.**
- WD brings winter and pre-monsoon rain and is important for the development of the Rabi crop in the Northern subcontinent.
- The **WDs are not always the harbingers of good weather.** Sometimes WDs can cause extreme weather events like floods, flash floods, landslides, dust storms, hailstorms and **cold waves** killing people, destroying infrastructure and impacting livelihoods. Hence, **statement 2 is not correct.**

112. Ans: C

Exp:

Seafloor Spreading:

- Seafloor spreading is the process of magma welling up in the rift as the old crust pulls itself in opposite directions.

- **Cold seawater cools the magma, creating a new crust.** The upward movement and eventual cooling of this magma has created high ridges on the ocean floor over millions of years. Hence **statement 1 is correct.**
- Seafloor spreading **occurs at divergent plate boundaries.** As tectonic plates slowly move away from each other. Hence **statement 2 is correct.**
- The East Pacific Rise is a site of major seafloor spreading in the Ring of Fire.
  - ◆ It is located on the divergent boundary of the Pacific Plate, the Cocos Plate (west of Central America), the Nazca Plate (west of South America), the North American Plate and the Antarctic Plate.

113. Ans: A

Exp:

- Chenab river rises in the upper Himalayas in the Lahaul and Spiti district of Himachal Pradesh state. Hence, **statement 1 is correct.**
- The river is formed by the confluence of two rivers, Chandra and Bhaga, at Tandi, 8 km southwest of Keylong, in the Lahaul and Spiti district.
  - ◆ The Bhaga River originates from Surya taal lake, which is situated a few kilometers west of the Bara-lacha la pass in Himachal Pradesh.
  - ◆ The Chandra River originates from glaciers east of the same pass (near Chandra Taal).
- It flows through the Jammu region of Jammu and Kashmir into the plains of Punjab, Pakistan, **before flowing into the Indus River.** Hence, **statement 2 is not correct.**

114. Ans: B

Exp:

- 38th Parallel is the parallel of latitude which separates North Korea and South Korea. Hence, **statement 1 is correct.**
- Medicine Line is the border between United States and Canada, Hence, **statement 2 is not correct.**
- Hindenburg Line is the boundary dividing Germany and Poland, Hence, **statement 3 is not correct.**
- 45th Parallel north is the halfway point between the Equator and the North Pole, Hence, **statement 4 is not correct.**

115. Ans: A

Exp:

Adriatic Sea:

- Arm of the Mediterranean Sea, lying between Italy (have largest boundry) and the Balkan Peninsula.



- It extends **from the Gulf of Venice south to the Strait of Otranto**, linking it to the **Ionian Sea**.
- Herzegovina, Montenegro, Albania and Slovenia.
- Hence, **option A is correct.**



116. Ans: C

Exp:

- Bordering Countries of Black sea: Ukraine, Russia, Georgia, Turkey, Bulgaria and Romania. Hence, **option C is correct.**



117. Ans: A

Exp:

- A team of paleontologists from the US have discovered the first Triassic-era (about 250-200 MYA) caecilian fossil that could help fill an 87-million-year gap in the historical record of caecilians having amphibian-like structure (no fossils have been found before).
- The fossil has been named *Funcusvermis gilmorei*. Hence, **option A is correct.**

118. Ans: B

Exp:

- The Rann of Kachchh comprises a unique example of Holocene sedimentation. It covers a large tracts of

23,000 sq. km and has been arbitrarily divided into two parts namely the Great Rann and Little Rann.

- It is a salt marshy land in the **Thar Desert in the kachchh district of western Gujarat**. Hence, **statement 1 is not correct.**
- It lies between Gujarat in India and the Sindh province in Pakistan. Hence, **statement 2 is correct.**

119. Ans: D

Exp:

The Siliguri corridor or **Chicken's neck** (West Bengal) is a stretch of **land bordering Bangladesh, Bhutan and Nepal**, measuring approximately 170x60 km; **at the narrowest it is about 20-22 km.**

Hence, **option D is correct.**



120. Ans: B

Exp:

Caspian Sea:

- **Physical Geography:**



- ◆ Earth's **largest inland body of water**, when measured by surface area. **Hence, statement 1 is correct.**
- ◆ **Bordered by** Russia (northwest), Azerbaijan (west), Iran (south), Turkmenistan (southeast) and Kazakhstan (northeast). **Hence, statement 2 is not correct.**
  - In 2003, the Caspian littoral states **signed the (Tehran) Framework Convention** for the Protection of the Marine Environment of the Caspian Sea.
- ◆ Lies at the junction of Europe and Asia, with the **Caucasus Mountains** to the west and the **steppes of Central Asia** to the east.

121. Ans: A

Exp:

- **Strait of Malacca** connects the **Andaman Sea (Indian Ocean)** and the **South China Sea (Pacific Ocean)**. **Hence, statement 1 is correct.**
- ◆ Runs between the Indonesian island of Sumatra to the west and peninsular (West) Malaysia and extreme southern Thailand to the east.
- ◆ **Shortest sea route between the Middle East and East Asia**, helping to reduce the time and cost of transportation among Asia, the Middle East and Europe. **Hence, statement 2 is not correct.**



122. Ans: C

Exp:

- **South China Sea** is an arm of the **western Pacific Ocean** that borders the **Southeast Asian mainland**. **Hence, statement 1 is correct.**
- It is bordered by **Brunei, Cambodia, China, Indonesia, Malaysia, the Philippines, Singapore, Taiwan, Thailand and Vietnam.**

- **The South China Sea** is connected by the **Taiwan Strait** with the **East China Sea** and by the **Luzon Strait** with the **Philippine Sea** (both marginal seas of the Pacific Ocean). **Hence, statement 2 is correct.**

123. Ans: C

Exp:

- **Silent Valley** was declared as a **National Park in 1984** and formally inaugurated in the year **1985**.
- **Silent valley national Park** is the core part of the **Nilgiri Biosphere Reserve on Nilgiri Hill**. **Hence, statement 1 is correct.**
- **Nilgiri Hills**, which literally means the **blue mountains**, got their name from the **purplish-blue flowers of Neelakurinji** that bloom only once in **12 years**. **Hence, statement 2 is correct.**
- **Neelakurinji** is a shrub that is found in the **shola forests** of the **Western Ghats** in **Kerala, Karnataka and Tamil Nadu**.

124. Ans- B

Exp:

- **Coal** is found in the form of **sedimentary rocks** and is often known as '**Black Gold**'.
- ◆ It is a **conventional source of energy**. It is **used as a domestic fuel**, in industries such as **iron and steel, steam engines** and to generate **electricity**.
- **Anthracite** contains **80 - 95% carbon content**, found only in **Jammu and Kashmir** in India. **Hence, statement 1 is not correct.**
- **Gondwana coal** forms India's metallurgical grade as well as superior quality coal. Gondwana coal makes up to **98% of the total reserves** and **99 % of the production of coal in India**. **Hence, statement 2 is correct.**

125. Ans: D

Exp:

Kuril Islands

- Kuril Islands are stretched from the Japanese island of Hokkaido to the southern tip of Russia's Kamchatka Peninsula **separating Okhotsk Sea from the North Pacific Ocean**. **Hence statement 2 is not correct.**
- It consists of 56 islands and minor rocks. The chain is part of the belt of geologic instability circling the Pacific (Ring of Fire) and contains at least 100 volcanoes, of which 35 are still active, and many hot springs.
  - ◆ Earthquakes and tidal waves are common phenomena over these islands.
- **Russia-Japan Dispute:**



- ◆ The Kuril Islands dispute between Japan and Russia is **over the sovereignty of South Kuril Islands**.
- ◆ The South Kuril Islands **comprise Etorofu island, Kunashiri island, Shikotan Island and the Habomai island**.
- ◆ These islands are claimed by Japan but occupied by Russia as the successor state of the Soviet Union. **Hence statement 1 is not correct.**
- ◆ Japan calls the Islands as Northern Territories and Russia as the South Kuril.



126. Ans: D

Exp:

- Red Sea is an inlet of the Indian Ocean between Africa and Asia. One of the most saline bodies of water in the world.
- It is connected to the Indian ocean in south through the Bab el Mandeb strait and the Gulf of Aden.
- In the north are the Sinai Peninsula, the Gulf of Aqaba, and the Gulf of Suez (leading to the Suez Canal).
- It occupies a part of Great Rift Valley (Afro-Arabian Rift Valley).
- **Bordering Countries are:**
  - ◆ Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti.

● **Hence, option D is correct.**

127. Ans: C

Exp:

- The **Mahanadi River system** is the **third largest of peninsular India** after Godavari and Krishna, and the **largest river of Odisha state**.
  - ◆ Godavari is the largest river in Chhattisgarh.

- The catchment area of Mahanadi River extends to Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.

- ◆ Its basin is bounded by the Central India hills on the north, by the Eastern Ghats on the south and east and by the Maikala range in the west.
- ◆ It rises from a place near Sihawa, in the Dhamtari district of Chhattisgarh.

- **Major Dams/Projects on Mahanadi:**

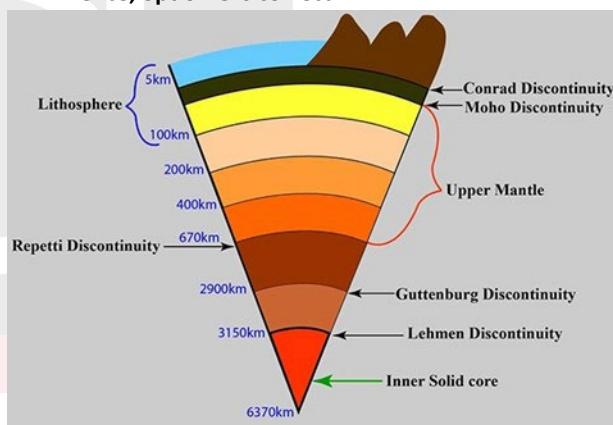
- ◆ **Hirakud Dam: This is the longest dam of India.**
- ◆ Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.

- **Statement 3 is correct; therefore, option C is the correct answer.**

128. Ans: C

Exp:

- The Mohorovicic Discontinuity, or "Moho," is the boundary between the crust and the mantle. All the other mentioned discontinuities lie below the Mantle.
- **Hence, option C is correct.**



129. Ans: C

Exp:

**Adi Community**

- The Adi tribe of Arunachal Pradesh is **believed to have come from southern China in the 16th century**. They are the **Tibeto-Burman language-speaking population**.
- They reside in the far north **inhabiting East Siang and Lower Dibang Valley districts** of Arunachal Pradesh. **Hence, statement 1 is correct.**
- The Adis are experts at making cane and bamboo items. **Solung** (a harvesting festival where animal sacrifices and rituals are performed), **Aran** (a hunting festival where all the male members of the family go



for hunting) are also among the major festivals of the **Adi tribes** and **Siang Unying** (to honour the season of cultivation, the beginning of the Adi community's new year, the arrival of spring seasons). **Hence, statement 2 is correct.**

130. Ans: C

Exp:

- The **Mahanadi River system** is the **third largest of peninsular India** after Godavari and Krishna, and the **largest river of Odisha state**.
  - ◆ Godavari is the largest river in Chhattisgarh.
- The catchment area of Mahanadi River extends to Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.
  - ◆ Its basin is bounded by the Central India hills on the north, by the Eastern Ghats on the south and east and by the Maikala range in the west.
  - ◆ It rises from a place near Sihawa, in the Dhamtari district of Chhattisgarh.
- **Major Dams/Projects on Mahanadi:**
  - ◆ **Hirakud Dam:** This is the longest dam of India.
  - ◆ Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula are other major projects.
- **Statement 3 is correct; therefore, option C is the correct answer.**

131. Ans: C

Exp:

- It is a mechanism **for forest monitoring, tracing and labelling** timber, wood and pulp products and non-timber forest products. **Hence, statement 1 is correct.**
- It is a process through which quality of management from environmental, social and economic perspectives is judged against a series of agreed standards.
- There are two major international standards for sustainable management of forests and forest-based products,
  - ◆ One has been developed by Forest Stewardship Council (FSC);
  - ◆ The other by Programme for Endorsement of Forest Certifications (PEFC).
- The forest certification industry has been operating in India for the last 15 years.
- Currently, **forests in only Uttar Pradesh are certified.** **Hence, statement 2 is correct.**

- Forest certification in India is still at an early stage and therefore the nation has not been able to make use of the benefits of forest certification.

132. Ans: C

Exp:

About:

- According to the **1958 Geneva Convention on the High Seas**, parts of the sea that are **not included in the territorial waters** or the internal waters of a country are known as the high seas. **Hence, statement 1 is not correct.**
- It is the area beyond a **country's Exclusive Economic Zone** (that extends up to **200 nautical miles (370 km) from the coastline**) and where a nation has jurisdiction over living and non-living resources. **Hence, statement 2 is correct.**
- No country is responsible **for the management and protection of resources on the high seas.**

Significance:

- The high seas **account for more than 60% of the world's ocean area** and cover about **half of the Earth's surface**, which makes them a hub of marine life. **Hence, statement 3 is correct.**
- They are home to **around 2.7 lakh known species**, many of which are yet to be discovered.
- They regulate the climate by playing a **fundamental role in planetary stability by mitigating the effects of climate change** through its **absorption of carbon** and by **storing solar radiation** and distributing heat around the globe.
- Therefore, they are fundamental to human survival and well-being.
- Moreover, the ocean **provides many resources and services**, including seafood and raw materials, genetic and medicinal resources, air purification, climate regulation, and aesthetic, scientific and cultural services.

133. Ans: D

Exp:

- **Eutrophication** is a **natural or human-induced process** where a **water body**, such as a **lake, river, or ocean**, becomes excessively rich in nutrients like **nitrogen** and **phosphorus**. **Hence, statement 1 is correct.**
- Excess nutrients can lead to the overgrowth of algae and other aquatic plants, which can form dense mats on the water surface known as **algal blooms**.



- Oxygen depletion can result in areas of the water body becoming **hypoxic**, which means there is not enough oxygen to support aquatic life.
- **Algal bloom** and **Hypoxia** in the water body are the two most prominent outcomes of eutrophication. Hence, statement 2 is correct.

134. Ans: A

Exp:

- About:
  - ◆ Critical minerals are **elements that are the building blocks of essential modern-day technologies** and are at risk of supply chain disruptions. Hence, statement 1 is correct.
  - ◆ Examples: Copper, lithium, nickel, cobalt, and rare earth elements are critical components in many of today's rapidly expanding clean energy technologies, ranging from wind turbines and power grids to electric vehicles. As the transition to clean energy accelerates, demand for these minerals will skyrocket. Hence, statement 2 is not correct.
  - **Indian Policy:** India's Department of Science and Technology, in collaboration with the Council on Energy, Environment and Water, drafted the **Critical Minerals Strategy for India in 2016**, with a focus on India's resource requirements till 2030.
  - The Indian Critical Minerals Strategy has identified 49 minerals that will be vital for India's future economic growth.

135. Ans: B

Exp:

**Gulf of Mannar:**

- It is an **inlet of the Indian Ocean**, between southeastern India and **western Sri Lanka**. Hence, statement 1 is not correct.
- It is bounded to the northeast by **Rameswaram (island)**, **Adam's (Rama's) Bridge** (a chain of shoals), and **Mannar Island**. Hence, statement 2 is correct.
- It receives several rivers, including the **Tambraparni (India)** and the **Aruvi (Sri Lanka)**.
- The gulf is noted for its **pearl banks** and **sacred chank** (a gastropod mollusk). Hence, statement 3 is correct.

**Gulf of Mannar Marine National Park:**

- The **Marine National Park** was established in **1982** under the provisions of the Wildlife (Protection) Act, 1972. Total area of the National park is about 162.89 km<sup>2</sup>.

- Major ecosystem types available are **coral reefs, mangroves, mudflats, creeks, seagrass, & seaweeds, estuaries, sandy strands** to saline grasslands, marshy areas and rocky shores.



136. Ans - A

Exp:

- A **tropical cyclone is an intense circular storm that originates over warm tropical oceans** and is characterized by low atmospheric pressure, high winds, and heavy rain. Hence, statement 1 is correct.
- A characteristic feature of tropical cyclones is the **eye**, a central region of clear skies, warm temperatures, and low atmospheric pressure.
- Storms **rotate counterclockwise in the northern hemisphere and clockwise in the southern hemisphere**. Hence, statement 2 is not correct.

137. Ans: A

Exp:



- **Aegean Sea** is an arm of the Mediterranean Sea. It is located in the East Mediterranean Basin with the **Greek peninsula to its west and Anatolia (consisting of the Asian side of Turkey) to its east**.

- The Aegean is connected through the straits of the Dardanelles, the Sea of Marmara, and the Bosphorus to the Black Sea, while the island of Crete can be taken as marking its boundary on the south.
- **Turkey-Greece Dispute:**
  - ◆ The Aegean Sea maritime dispute comprises three main issues: the breadth of the territorial sea; the presence of islands; and the delimitation of the continental shelves between the two States.
  - ◆ Since 1936, Greece has claimed a 6 nautical-mile (nm) territorial sea. Turkey also claims a 6-nm territorial sea in the Aegean. However, the United Nations Convention on the Law of the Sea 1982 (UNCLOS) allows States to extend their territorial sea up to 12 nm from the shore.
- Hence, option A is correct.

138. Ans: C

Exp:



- The **Alps** emerged during the **Alpine orogeny (mountain-building event)**, an event that began about **65 million years** ago as the **Mesozoic Era** was drawing to a close.
- Alps are young fold mountains with rugged relief and high conical peaks. Hence, statement 1 is correct.
- The **Alps** extend north from the **subtropical Mediterranean coast near Nice, France** to **Lake Geneva** before trending **east-northeast** to **Vienna, Austria**. Hence, statement 2 is correct.
- There they touch the **Danube River** and meld with the adjacent plain.

139. Ans: B

Exp:

- A heatwave is a **period of abnormally high temperatures**, a common phenomenon in India during

the months of May-June and in some rare cases even extends till July.

- **India Meteorological Department (IMD)** classifies heat waves according to regions and their temperature ranges. As per IMD, **the number of heatwave days in India has increased from 413 over 1981-1990 to 600 over 2011-2020.**
- Hence, statement 2 is correct.
- The Heatwave is considered when the **maximum temperature of a station reaches at least 40°C for Plains and at least 30°C for Hilly regions.**
- Hence, statement 1 is not correct.
- If the **normal maximum temperature of a station** is less than or equal to 40°C, then an **increase of 5°C to 6°C from the normal temperature** is considered to be heat wave condition.
  - ◆ Further, an **increase of 7°C or more** from the normal temperature is considered a **severe heat wave condition.**
  - ◆ If the **normal maximum temperature of a station** is more than 40°C, then an **increase of 4°C to 5°C from the normal temperature** is considered to be heat wave condition. Further, an **increase of 6°C or more** is considered a severe heat wave condition.
  - ◆ Additionally, if the **actual maximum temperature remains 45°C or more** irrespective of normal maximum temperature, a **heat wave is declared.**

140. Ans: D

Exp:



- Hence, option D is correct.

141. Ans: C

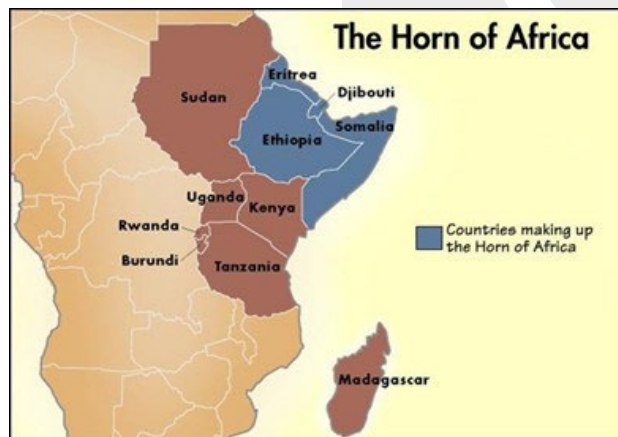
Exp:

- Kalanamak rice is a **traditional variety of paddy with a black husk and a strong fragrance**.
  - ◆ This will address the problem of lodging responsible for low yield seen across the traditional variety. Hence, statement 1 is not correct.
- It is considered a 'gift from Lord Buddha' to the people of the Sravasti when he visited the region after enlightenment. Hence, statement 2 is correct.
- It is **grown in 11 districts of the Terai region of northeastern Uttar Pradesh and in Nepal**. Hence, statement 3 is not correct.
- Kala Namak rice is grown mainly without using fertiliser or pesticide residues, making it perfect for crop production. Hence, statement 4 is correct.

142. Ans: C

EXPL:

- Horn of Africa, region of eastern Africa.
- It is the easternmost extension of African land and for the purposes of this article is defined as the region that is home to the countries of **Djibouti, Eritrea, Ethiopia, and Somalia**, whose cultures have been linked throughout their long history. Hence, option (c) is correct.



143. Ans- B

Exp:

- Cyclones are rapid inward air circulation around a low-pressure area. There are two types of cyclones:
  - ◆ Tropical Cyclones
  - ◆ Extra Tropical cyclones (also called Temperate cyclones or Frontal cyclones)

- They are given different names in different regions of the world. Like:

- Typhoons in the China Sea and Pacific Ocean. Hence, 1 is correctly matched.
- Tornadoes in the West Africa and southern USA. Hence, 2 is correctly matched.
  - ◆ Tropical Cyclones in the Indian Ocean
- Hurricanes in the North Atlantic and Eastern Pacific. Hence, 3 is incorrectly matched.

144. Ans: C

Exp:

**Strait of Hormuz:**

- It is the waterway **separating Iran and Oman**, linking the Persian Gulf to the Gulf of Oman and the Arabian Sea. Hence, statement 2 is correct.
- On the north coast lies Iran, and on the south are the UAE and Musandam, an enclave of Oman.
- The Strait is **21 miles wide** at its narrowest point, but the **shipping lane is just two miles wide** in either direction.
- Importance:
  - ◆ The Strait of Hormuz is one of the world's most strategically important choke points.
- Two-thirds of the oil and half the Liquefied Natural Gas (LNG) Indian imports **come through the strait between Iran and Oman**. Hence, statement 1 is correct.
  - ◆ As much as 18 million barrels of oil pass through the Strait of Hormuz every day, accounting for one-third of the global oil trade.
  - ◆ A third of the world's LNG trade also passes through the strait.

145. Ans: B

Exp:

- Recently, the US President hosted the first-ever **U.S.-Pacific Island Country Summit** in Washington, D.C, and announced **USD 810 million in funding for Pacific Islands**. The package aims to clean up and **develop dirty waters to support the tuna industry**, which will also expand climate and development aid and its diplomatic presence.
- China had made inroads in the strategic but sparsely populated region by asserting itself strongly in recent years in the Pacific Islands through investment, police training and, most controversially, a security pact with the **Solomon Islands**. Therefore, the US is re-engaging with the region that has been tied closely to it since World War II. Hence, statement 1 is not correct.



- The Pacific Island Countries are a **cluster of 14 states which are located largely in the tropical zone of the Pacific Ocean** between Asia, Australia and the Americas.
- They include Cook Islands, Fiji, Kiribati, Republic of Marshall Islands, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.
- **Largest Exclusive Economic Zones (EEZs):** The islands are **divided on the basis of physical and human geography** into three distinct parts — **Micronesia, Melanesia and Polynesia.**
- Despite their small land area, the **islands are spread out over a wide swath of the Pacific Ocean.** Kiribati and FSM, have EEZs larger than that of India. **Hence, statement 2 is correct.**

146. Ans: B

Exp:

- Recently, India and Nepal have agreed to take forward the Sapta Kosi (**known as Kosi River in India**) high dam project through further studies.
- The Kosi is a **trans-boundary river which flows through Tibet, Nepal and India.**
- It has its source in Tibet that includes the **world's highest upland, it then drains a large part of Nepal before emerging onto the Gangetic plains.** Hence, **statement 1 is not correct.**
- Its three major tributaries: the Sun Kosi, Arun and Tamur meet at one point just upstream of a 10 km gorge cut through the Himalayan foothills.
- **Hence, statement 2 is correct.**
- The river crosses into **northern Bihar, India** where it branches into distributaries before **joining the Ganges near Kursela in Katihar district.**
- The Kosi carries the **maximum amount of silt and sand after the Brahmaputra in India.**

147. Ans: B

Exp:

- The **Pacific Island Countries are a cluster of 14 states** which are located largely in the tropical zone of the Pacific Ocean between Asia, Australia and the Americas.
- They include Cook Islands, Fiji, Kiribati, Republic of **Marshall Islands**, Federated States of Micronesia (FSM), Nauru, Niue, Palau, Papua New Guinea, Samoa, **Solomon Islands**, Tonga, **Tuvalu** and Vanuatu.
- **Hence, option B is correct.**

148. Ans: C

Exp:

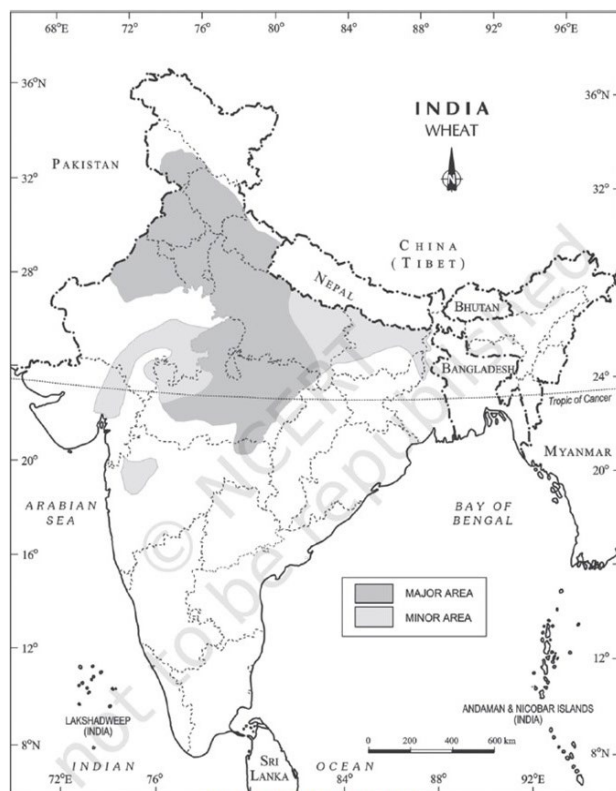
- **Trincomalee harbour is on the northeastern coast of Sri Lanka.** It is situated on a peninsula in **Trincomalee Bay—formerly called Koddigar Bay.** Hence, **statement 1 is correct.**
- **Trincomalee is the nearest port to Chennai, India.** Hence, **statement 2 is correct.**
- The location of this port in Indian ocean has strategic significance, it has been of interest to several countries, including India, Japan and the US.
- Trincomalee already has several dedicated port terminals —it has Lanka Indian Oil Company facility, Tokyo Cement facility, and grain facility for a flour factory, and a tea terminal.
- This development will decongest and help in offloading operations at Colombo Port which will increase the supply chain.
- This would also entail the development of the port for non-containerised cargo traffic, such as cement, coal or other industrial raw material.

149. Ans: C

Exp:

- Wheat is the second most important cereal crop in India after rice.
  - ◆ It is the main food crop, in the north and north-western part of the country.
  - ◆ It is **primarily a crop of temperate zone.** Being a rabi crop, it is mostly grown under irrigated conditions.
- It is also grown in subtropical region of India like **Himalayan Highland** and Malwa plateau in Madhya Pradesh as a rainfed crop. **Hence, statement 1 is correct.**
- **India is the world's second-biggest wheat producer after China.** But it accounts for less than 1% of the global wheat trade due to its domestic consumption.
  - ◆ Largest Wheat **Exp:rt**ing nations in 2020 were **Russia (\$10.1B), Canada (\$7.13B), United States (\$7.04B), France (\$4.76B), and Ukraine (\$4.61B).**
  - ◆ So, India is not among the largest wheat exporting nations. **Hence statement 2 is not correct.**
  - ◆ India accounts for less than 1% of total global wheat export. **Indias' top wheat export markets are Bangladesh, Nepal and Sri Lanka - as well as the United Arab Emirates (UAE).** Hence **statement 3 is correct.**





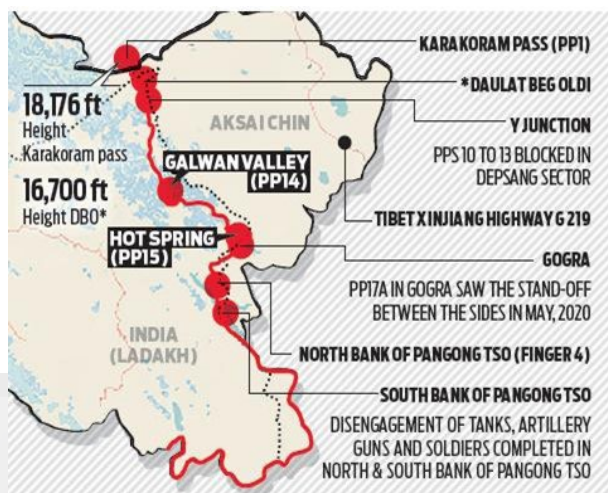
150. Ans: C

Exp:



- Israel shares land borders with Syria, Lebanon, Jordan and Egypt but not with Cyprus. Hence, option C is correct.

151. Ans: C



Exp:

- The correct order from North to South is Daulat Beg Oldi, Galwan Valley, Hot Spring and Pangong Tso. Hence, option C is correct.

152. Ans: D

Exp:

- The Kosi is a trans-boundary river which flows through Tibet, Nepal and India. Hence, statement 1 is not correct.
- It has its source in Tibet that includes the world's highest upland, it then drains a large part of Nepal before emerging onto the Gangetic plains.
- Its three major tributaries, the Sun Kosi, Arun and Tamur meet at one point just upstream of a 10 km gorge cut through the Himalayan foothills.
- The river crosses into northern Bihar, India where it branches into distributaries before joining the Ganges near Kursela in Katihar district.
- The Kosi carries the maximum amount of silt and sand after the Brahmaputra in India. Hence, statement 2 is not correct.
- It is also known as the "Sorrow of Bihar" as the annual floods affect about 21,000 sq. km. of fertile agricultural lands thereby disturbing the rural economy. Hence, statement 3 is correct.