Test Series Question Paper 16-12-2023

Q1. Consider the following statements regarding Lake Chad?
1. It is the largest salt water lake of Africa.
2. It share its border with only four countries.
3. This Lake shrunk by more than ninety percent since 1960s.

How many of the statement given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- **Statement 1 is incorrect:** The Lake Chad is a vast area of fresh water located in the middle of sand dunes of westerns Central Africa.
- **Statement 2 is correct:** Its basin covers parts of Nigeria, Niger, Chad and Cameroon, and has been a water source for between 20 million and 30 million people.
- **Statement 3 is correct:** Lake Chad has shrunk by 90% since the 1960s, due to climate change, an increase in the population and unplanned irrigation.

Q2. Consider the following statements regarding Baltic Sea?
1. It is one the world's largest fresh water lake.
2. Vistula River drain into the sea.
3. Sea share its border with Poland, Lithuania and Germany.
4. It is one of the oldest seas in the world.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (b)
Explanation:

- **Statement 1 is incorrect:** Baltic Sea contains a unique mixture of saltwater and freshwater, making it the largest brackish water body on the planet.
- **Statement 2 is correct:** The Vistula is the longest river in Poland and the ninth-longest river in Europe, at 1,047 kilometres in length. Its drainage basin, extending into three other countries apart from Poland. The river originates from the Barania Góra Mountains and drains into the Baltic Sea near Gdańska.
- **Statement 3 is correct:** The European Union Member States – Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Poland and Germany – and Russia are all directly bordering the Baltic Sea.
- **Statement 4 is incorrect:** The Baltic Sea is the youngest sea on our planet, emerging some 10,000-15,000 years ago as the glaciers retreated at the end of the last Ice Age.

Q3: Consider the following pairs:

Rivers	Drains into
1. Danube	Black Sea
2. Dnieper	Caspian Sea
3. Po river	North Sea

How many pairs given above is/are ***incorrect***?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:
Pair 1 is correct: The Danube is the second-longest river in Europe, with a length of 2,850 km (1,770 mi). It begins in the Black Forest in Germany and flows east to the Black Sea, forming the Danube Delta on its western coast.
Pair 2 is incorrect: The Dnieper is one of the major transboundary rivers of Europe, rising in the Valdai Hills near Smolensk, Russia, before flowing through Belarus and Ukraine to the Black Sea.
Pair 3 is incorrect: The longest river in Italy is the Po. Its headwaters are on the slopes of Mount Viso in the Cottian Alps, near the French border. River begins its long course across the northern portion of the country. The river flows 405 miles (652 kilometers) to empty into the Adriatic Sea on the east coast of Italy.

Q4. With reference to 'Indian Ocean Dipole' (IOD) sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct?

1. IOD phenomenon is characterised by a difference in sea surface temperature between tropical Western Indian Ocean and tropical Eastern Pacific Ocean.
2. An IOD phenomenon can influence an El Nino's impact on the monsoon.

Select the correct answer using the code given below:
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:

- **Statement 1 is incorrect:** The Indian Ocean Dipole (IOD) is an irregular oscillation of sea-surface temperatures in which the western Indian Ocean becomes alternately warmer and then colder than the eastern part of the Indian Ocean.
- **Statement 2 is correct:** An Indian Ocean Dipole (IOD) event can influence the El Nino impact on the Indian monsoon. During an IOD-positive event, the sea surface temperatures of the western Indian Ocean are higher than those of the eastern Indian Ocean.
- During negative Indian ocean dipole (IOD)cooler sea surface temperatures in the western Indian Ocean relative to the east. winds become more westerly, bringing increased cloudiness to Australia's northwest. more rainfall in the Top End and southern Australia.

Q5. In the South Atlantic and South-Eastern Pacific regions in tropical latitudes, cyclone does not originate. What is the reason?
(a) Sea surface temperatures are low
(b) Inter-tropical Convergence Zone seldom occurs
(c) Coriolis force is too weak
(d) Absence of land in those regions

Ans: (b)
Explanation:

- ITCZ stays at or near the equator and does not shift southward over the south Atlantic or South Pacific region. Therefore, these regions do not have the ITCZ over them which is a major cause of the lack of cyclones. ***So, option (b) is correct.***
- Several conditions are needed for a tropical cyclone to form:
  - ❖ High sea temperatures of at least 27°C.
  - ❖ Converging winds near the ocean surface forcing air to rise and form storm clouds.
  - ❖ Winds that do not vary greatly with height - known as low wind shear. This allows the storm clouds to rise vertically to high levels.
  - ❖ Sufficient distance from the equator for a spin such as the Coriolis force to take effect.
  - ❖ Presence of Coriolis force.

Q6. What explains the eastward flow of the equatorial counter current?
(a) Due to strong Westerlies in the region
(b) Convergence of the two equatorial currents.
(c) Difference in salinity of water
(d) Occurrence of the belt of calm near the equator

Ans: (b)
Explanation:
The Equatorial Counter Current is an eastward flowing, wind-driven current which extends to depths of 100–150 metres (330–490 ft) in the Atlantic, Indian, and Pacific Oceans.
At doldrums, winds are light and flow of water is along horizontal pressure gradient in a current that is counter to prevailing wind direction. Due to convergence of two equatorial currents near the equator and existence of doldrum region simultaneously, the water gets accumulated at one end and lowers the other. The density difference so created leads to origination of counter equatorial current. **So, option (b) is correct.**

Q7. Consider the following statements:
1. The winds which blow between 30 N and 60 S latitudes throughout the year are known as westerlies.
2. The moist air masses that cause winter rains in North-Western region of India are part of westerlies.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:
Statement 1 is incorrect: Prevailing winds that flows from west to east direction between 30 to 60 degrees in both the hemisphere is termed as westerlies.
Statement 2 is correct: A western disturbance is an extratropical storm originating in the Mediterranean region that brings sudden winter rain to the northwestern parts of the Indian subcontinent, which extends as east as up to northern parts of Bangladesh and South eastern Nepal.

Q8. Tides occur in the oceans and seas due to which among the following?
1. Gravitational force of the Sun
2. Gravitational force of the Moon
3. Centrifugal force of the Earth

Select the correct answer using the code given below.
(a) Only 1
(b) Only 2 and 3
(c) Only 1 and 3
(d) 1, 2 and 3

Ans: (d)
Explanation:

- The alternating advance and retreat of seawater along a coastline is called a tide. High tide is when water advances to its furthest extent onto the shoreline. Low tide is when it recedes to its furthest extent.
- The gravitational pull of the moon and the rotational force of the Earth cause tides to rise and fall across the planet. The species living in coastal areas most affected by changing tides have unique ways of surviving.
- Twice a month, when the Earth, Sun, and Moon line up, their gravitational power combines to make exceptionally high tides, called spring tides, as well as very low tides where the water has been displaced. When the Sun is at a right angle to the Moon, moderate tides, called neap tides, result. **So, option (d) is correct.**

Q9. What is the correct sequence of occurrence of the following cities in South-East Asia as one proceeds from south to north?
1. Bangkok
2. Hanoi
3. Jakarta
4. Singapore

Select the correct answer using the code given below:
(a) 4-2-1-3
(b) 3-2-4-1
(c) 3-4-1-2
(d) 4-3-2-1

Ans: (c)
Explanation:

- Jakarta, Indonesia's massive capital, sits on the northwest coast of the island of Java. Its latitude is 6.19° South.
- Singapore City is the capital of Republic of Singapore, is an island country and city-state in maritime Southeast Asia. Its latitude is 1.35° North.
- Bangkok, Thailand's capital, is a large city known for ornate shrines and vibrant street life. Its latitude is 13.75° North.
- Hanoi, the capital of Vietnam, is known for its centuries-old architecture and a rich culture with Southeast Asian, Chinese and French influences. Its latitude is 21.02° North. **So, option (c) is correct.**

Q10. Which of the following has/have shrunk immensely/dried up the recent past due to human activities?
1. Aral Sea
2. Black Sea
3. Lake Baikal

Select the correct answer using the code given below:
(a) 1 only
(b) 2 and 3
(c) 2 only
(d) 1 and 3

Ans: (a)
Explanation:
- The world's fourth largest lake in 1960, the Aral Sea has already shrunk to half its former size - a result of unsustainable cotton cultivation that began less than 40 years ago. But though the sea itself can no longer be saved, its toxic salt plains have paradoxically given rise to a new spirit in the region.
- The Aral Sea is only the epicentre of the "tragedy", as Central Asians commonly refer to this legacy of environmental misuse, the damage has also consumed thousands of surrounding square kilometres. It was called "the most staggering disaster of the twentieth century" by the United Nations Development Programme (UNDP). Black Sea and Lake Baikal not showing signs of immense shrinking. ***So, option (a) correct.***

Q11. Consider the following statements:
1. Jet streams occur in the Northern Hemisphere only.
2. Only some cyclones develop an eye.
3. The temperature inside the eye of a cyclone is nearly 10°C lesser than that of the surroundings.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2 and 3
(c) Only 2
(d) Only 1 and 3

Ans: (c)
Explanation:
Statement 1 is incorrect: Jet streams are currents of air high above Earth. They form where large temperature differences exist in the atmosphere. Jet streams are powerful currents of air that encircle the globe in both the Northern and Southern Hemispheres in an eastward direction at a height of 10–15 km.
Statement 2 is correct: An eye will usually develop when the maximum sustained wind speeds go above 74 mph (119 km/h) and is the calmest part of the storm. So not all cyclone develops an eye only some do. Temperate cyclone do not have eye, while tropical cyclone has.
Statement 3 is incorrect: Eye of a cyclone is a low pressure are so temperature will be more than its surrounding.

Q12. Consider the following statements with reference to Peninsular River system.
1. It has large basins and catchment are than Himalayan River system.
2. The peninsular rivers are perennial in nature.

3. Some of the Peninsular rivers are the Narmada and the Tapi form estuaries.

How many of the statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (a)
Explanation:

- **Statement 1 is incorrect:** These rivers have small basins and catchment areas in comparison to Himalayan river. The Godavari has the largest basin area of 3.12 lakh square kilometres only which is less than one-third the basin area of the Indus.
- **Statement 2 is incorrect:** The Peninsular rivers receive water only from rainfall and water flows in these rivers in rainy season only. Therefore, these rivers are seasonal or non-perennial. As such these rivers are much less useful for irrigation.
- **Statement 3 is correct:** Some of the Peninsular rivers, such as the Narmada and the Tapi form estuaries. Other rivers such as the Mahanadi, the Godavari, the Krishna and the Cauvery form deltas.

Q13. Which of the following is not an east flowing peninsular river?
(a) Mahanadi
(b) Subarnarekha
(c) Vaigai
(d) Sharavati

Ans: (d)
Explanation:
The major East flowing peninsular rivers of India are:

- Krishna
- Godavari
- Cauvery
- Mahanadi
- Subarnarekha
- Vaigai
- Brahmani
- Pennar

The major West flowing peninsular rivers of India are:

- Narmada
- Tapti/Tapi River
- Mahi
- Sabarmati River
- Luni
- Tawa River
- Sharavati River

Q14. Why are dew drops not formed on a cloudy night?
(a) Clouds absorb the radiation released from the Earth's surface.
(b) Clouds reflect back the Earth's radiation.
(c) The Earth's surface would have low temperature on cloudy nights.
(d) Clouds deflect the blowing wind to ground level

Ans: (b)
Explanation:

- The favourable weather elements for dew include clear skies, light wind, decent soil moisture. Clear skies allow for the maximum release of longwave radiation to space.
- Cloudy skies will reflect and absorb while re-emitting longwave radiation back to the surface and that prevents as much cooling from occurring. Dew is formed due to cooling of the atmosphere.

Q15. With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct?
1. OMT is measured up to a depth of 26°C isotherm which is 129 meters in the south-western Indian Ocean during January – March.
2. OMT collected during January March can be used in assessing whether the amount of rainfall in monsoon will be less or more than a certain long-term mean.

Select the correct answer using the code given below:
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:
- **Statement 1 is incorrect:** OMT is measured up to a depth of 26 degree C isotherm. During January–March, the mean 26 degree C isotherm depth in the Southwestern Indian Ocean is 59 metres.
- **Statement 2 is correct:** Sea surface temperature (SST) is routinely used for predicting whether the total amount of rainfall that India receives during the monsoon season will be less or more than the long-term mean. However, ocean mean temperature (OMT) has better ability to predict this, than SST.

Q16. Consider the following statements:
1. Venus has the densest atmosphere among the four terrestrial planets.
2. The Surface gravity on Mars is about 38% of the Earth's gravity.
3. Neptune is an ice giant which is surrounded by 13 faint rings and 27 small moons.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:
- The solar system comprises the sun and its nine planets. Planet is a celestial body moving in an elliptical orbit around a star.
- **Statement 1 is correct:** Venus is the second planet from the Sun. Out of the four terrestrial planets, Venus has the densest atmosphere. At its surface, the planet's atmosphere has 92 times the pressure of Earth.
- **Statement 2 is correct:** Mars is the fourth planet and the furthest terrestrial planet from the Sun. The surface gravity on Mars is only 38% of Earth's gravity.
- **Statement 3 is incorrect:** Uranus is the seventh planet from the Sun with the third largest diameter in our solar system. The ice giant is surrounded by 13 faint rings and 27 small moons as it rotates at a nearly 90-degree angle from the plane of its orbit. This unique tilt makes Uranus appear to spin sideways, orbiting the Sun like a rolling ball.

Q17. Consider the following statements:
1. Bhabar is a narrow belt ranging between 8-10 km parallel to the Siwalik foothills.
2. Terai is a thick forest narrow tract which is about 10-20 km wide.
3. Due to porosity of bhabar belt, rivers disappear in bhabar region.
4. Streams of bhabar region re-emerge in the Tarai belt.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (d)
Explanation:

- The maximum depth of alluvium deposits varies between 1,000-2,000 m. From the north to the south, these can be divided into three major zones: the Bhabar, the Tarai and the alluvial plains. The alluvial plains can be further divided into the Khadar and the Bhangar.
- **Statement 1 is correct:** Bhabar is a narrow belt ranging between 8-10 km parallel to the Siwalik foothills at the break-up of the slope.
- **Statement 2 is correct:** Terai is an ill-drained, marshy and thickly forested narrow tract to the south of Bhabar running parallel to it. The Terai is about 10-20 km wide.
- **Statement 3 is correct:** The streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in the bhabar region.
- **Statement 4 is correct:** In Tarai region, the streams and rivers re-emerge without having any properly demarcated channel. Terai region has a luxurious growth of natural vegetation and houses a varied wildlife.

Q18. Which of the following correctly explains the term "barchans"?
(a) Crescent-shaped sand dune that faces the wind and is convex in shape formed by the constant blow of wind in one direction.
(b) Flat-bottom depression found in interior desert basins.
(c) A very gently sloping inclined bedrock surface.
(d) Depositional features on a small scale formed by saltation.

Ans: (a)
Explanation:

- Barchan is a crescent-shaped sand dune that faces the wind and is convex in shape formed by the constant blow of wind in one direction.
- Example of barchans: Grand Erg Oriental, Sahara Desert; Great Sand Dune National Park, Southern Colorado.
- A barchan dune can form when a lot of sand is present in the desert. A steady wind from one direction is needed. The face of a barchan is very steep.

Q19. Consider the following statements:
1. Dafla
2. Mikir
3. Mishmi
4. Barail

Arrange the following from south to north:
(a) 1-2-3-4
(b) 4-2-1-3
(c) 3-4-2-1
(d) 2-4-3-1

Ans: (b)
Explanation:

- **Dafla hills:** Daphla (or Dafla) Hills is a tract of hilly country on the border of western Arunachal and Assam occupied by an independent tribe called Daphla. It lies to the north of the Tezpur and North Lakhimpur subdivisions, and is bounded on the west by the Aka Hills and on the east by the Abor Range.

- **Mikir hills:** Mikir Hills are a group of hills located to the south of the Kaziranga National Park, Assam. The easternmost Meghalaya comprising the detached Mikir Hills is partly isolated being surrounded by three sides. Karbi plateau or Mikir Hills is known oldest landform in Assam. is part of the Karbi-Plateau. Its highest peak is Dambuchko.
- **Mishmi hills:** The Mishmi Hills are located at the northeastern tip of India, in northeastern Arunachal Pradesh. The Himalayan arc takes a sharp turn and meets Indo-Burma ranges. The rocks of eastern lesser Himalaya and the central crystalline appear to be largely attenuated and truncated in Mishmi Hills.
- **Barail range:** The Barail Range is a tertiary mountain range in Northeast India with an area of approximately 80,000 hectare between Brahmaputra and Barak basins stretching from Nagaland & Manipur to the east and Assam & Meghalaya to the west.

Q20. Consider the following statements:

1. Aravali range is one of the oldest fold mountains of the world.
2. Dhupgarh is the highest peak of the Aravali range.
3. Aravali range runs parallel to the Narmada River.

How many of the above statements is/are correct?

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

Ans: (a)

Explanation:

- The Aravalli Range is a range of mountains in northern-western India that stretches roughly 670 km to the southwest. It begins close to Delhi and travels through southern Haryana, Rajasthan, and Ahmedabad, Gujarat.
- **Statement 1 is correct:** Given that it originated in the Proterozoic age, the Aravalli Range is possibly the oldest geological feature on Earth. At 1,722 meters, Guru Shikhar on Mount Abu is the highest summit.
- **Statement 2 is incorrect:** Mount Dhoopgarh is the highest peak in the Mahadeo Hills (Satpura Range), Madhya Pradesh, India, is Mount Dhoopgarh, also known as Mount Dhoopgarh. It has an elevation of 1,352

metres. A well-liked location to observe sunsets is atop the hill. Near the summit lies the Pachmarhi Hill station.

- **Statement 3 is incorrect:** Vindhyan range runs more or less parallel to the Narmada Valley in an east-west direction from Jobat in Gujarat to Sasaram in Bihar for a distance of over 1,200 km.

Q21. Consider the following statements:
1. Low-lying regions known for their salt production.
2. Presence of large amounts of monazite sand.
3. Presence of significant amounts of mineral oil

Which of the statement given above is/are the significance of the coastal plains?
(a) Only 1, and 2
(b) Only 2, and 3
(c) Only 1, and 3
(d) 1, 2, and 3

Ans: (d)
Explanation:
Significance of the coastal plains:

- **Statement 1 is correct:** Gujarat's low-lying regions are renowned for their salt production. Along the seaside, coconut trees are abundant.
- **Statement 2 is correct:** Large amounts of monazite, which is utilised in nuclear power, are found in the sands along the Kerala coast. The backwaters of Kerala are popular travel locations.
- **Statement 3 is correct:** In KG- basin, there are alleged to be significant amounts of mineral oil in the sedimentary strata of these plains.
- The majority of coastal residents make their living through fishing.

Q22. Which of the following correctly explains the term "kayals"?
(a) Thick glacial deposits.
(b) Mountains located in Western Ghats.
(c) Backwaters are locally known as kayals in Kerala.
(d) Easternmost region of Deccan plateau.

Ans: (c)
Explanation:

- The shallow sea entrance seen in rivers that run parallel to the coast is known as a backwater. Water that has been forced backward in its path by a barrier or the tides is known as a backwater. These backwaters in Kerala are referred to as kayals by the locals.
- A lagoon is a body of water that is bounded by larger bodies of water on all sides by a natural barrier.
- Kerala backwaters are a network of brackish lagoons and lakes. One of the famous examples is Vembanad lake. It is the longest lake in India, as well as the largest lake in the state of Kerala.

Q23. Kandla, Mazagaon, Marmagao are associated with which of the following:
(a) Mountain ranges of north-eastern India.
(b) Natural ports located along the west coast of India.
(c) Extension of Deccan plateau.
(d) Passes of Himalayan region.

Ans: (b)
Explanation:

- The western coastal plains are an example of submerged coastal plain. Because of this submergence it is a narrow belt and provides natural conditions for the development of ports and harbours.
- Kandla, Mazagaon, JLN port Navha Sheva, Marmagao, Mangalore, Cochin, etc. are some of the important natural ports located along the west coast.

Q24. Consider the following statements:
1. Andaman and Nicobar Islands are separated by the eight-degree channel.
2. Barren Island is the only active volcano in India is which is situated in the Nicobar Islands.
3. Andaman and Nicobar Islands have an equatorial type of vegetation.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

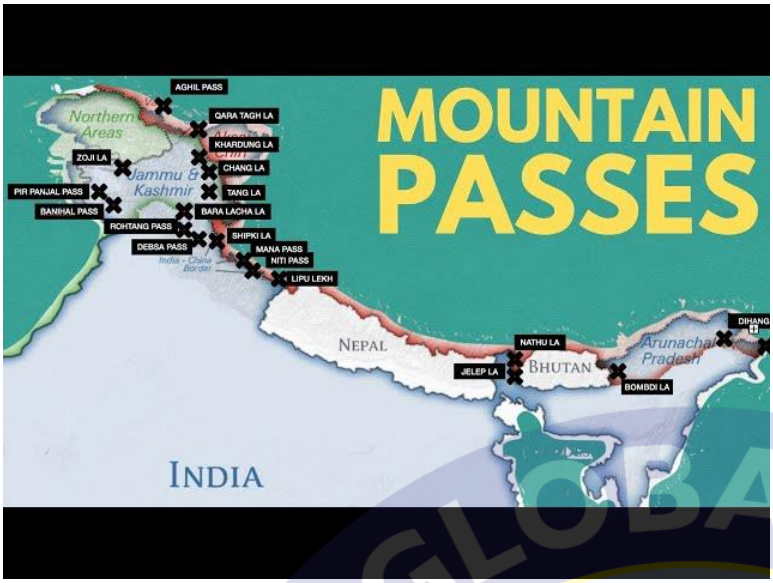
- The Andaman and Nicobar Islands is a union territory of India consisting of 571 islands, of which 37 are inhabited, at the junction of the Bay of Bengal and the Andaman Sea.
- **Statement 1 is incorrect:** They are separated by a waterbody which is called the Ten-degree channel. It is believed that these islands are an elevated portion of submarine mountains.
- **Statement 2 is correct:** Some smaller islands are volcanic in origin. Barren island, the only active volcano in India is also situated in the Nicobar Islands.
- **Statement 3 is correct:** The coastal line has some coral deposits, and beautiful beaches. These islands receive convectional rainfall and have an equatorial type of vegetation.

Q25. Consider the following passes of India:
1. Shipki la pass
2. Niti pass
3. Banihal pass
4. Zoji la pass

Arrange the following passes from north to south:
(a) 4-3-1-2
(b) 4-3-2-1
(c) 4-2-3-1
(d) 4-1-2-3

Ans: (a)
Explanation:

- **Shipki la pass:** Shipki La is a mountain pass and border post with a dozen buildings of significant size on the India-China border. The river Sutlej enters India (from Tibet) near this pass. The pass is on the border between Himachal Pradesh, India, and the Tibet, China. The pass is one of India's border trading points with Tibet along with Nathu La in Sikkim, and Lipulekh in Uttarakhand.
- **Niti pass:** Niti pass connects Uttarakhand with Tibet. The Niti Pass was an ancient trade route between India and Tibet, and it was sealed after the 1962 Sino-Indian War. Since then, the border has remained sealed.
- **Banihal pass:** Banihal pass is a mountain pass across the Pir Panjal Range in India at a maximum elevation of 2,832 m. It connects the Kashmir Valley in the Indian union territory of Jammu and Kashmir to the outer Himalaya and the plains to the south.
- **Zoji la pass:** Zojila pass is a high mountain pass in the Himalayas. The pass connects the Kashmir Valley to its west with the Dras and Suru valleys to its northeast and the Indus valley further east.



Q26. Consider the following pairs:

	Hills	**Place**
1.	Nagari Hills	Andhra Pradesh
2.	Shevaroy Hills	Tamil Nadu
3.	Cardamom Hills	Telangana

How many of the above pairs is/are correct?

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

Ans: (b)

Explanation:

- **Pair 1 is correct:** Nagari Hills are located to the north of Nagari town, Andhra Pradesh. The highest cliff of the hills is called Nagari Nose because it resembles a human nose and it is at a height of 855 m from the sea level.
- **Pair 2 is correct:** The Servaraya hills, with the anglicised name Shevaroy Hills, are a towering mountain range (1620 m) near the city of Salem, in Tamil Nadu state. The main town here is Yercaud.
- **Pair 3 is incorrect:** The Cardamom Hills or Yela Mala are mountain range of southern India and part of the southern Western Ghats located in Idukki district, Kerala.

Q27. Consider the following statements regarding "Big Bang Theory":

1. It is also known as s Hoyle's concept of steady state.
2. The event of big bang took place 13.7 billion years before the present.
3. As per theory, Galaxies are expanding and the space between them is also increasing.

How many of the above statements is/are correct?

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

Ans: (a)

Explanation:

- **Statement 1 is incorrect:** The Big Bang event is a physical theory that describes how the universe expanded from an initial state of high density and temperature. The Big Bang Theory is also called expanding universe hypothesis. In 1920, Edwin Hubble provided evidence that the universe is expanding.

- Hoyle's concept of steady state is an alternative to the Big Bang Theory. It considered the universe to be roughly the same at any point of time. However, scientific community at present favours argument of expanding universe.
- **Statement 2 is correct:** In the beginning, all matter forming the universe existed in one place in the form of a tiny ball. At the Big Bang the tiny ball exploded violently. This led to a huge expansion. It is now generally accepted that the event of big bang took place 13.7 billion years before the present.
- **Statement 3 is incorrect:** Scientists believe that the space between the galaxies is increasing, observations do not support the expansion of galaxies.

Q28. Consider the following pairs:

	Geographical Theories	**First proposed by**
1.	Continental drift theory	Alfred Wegener
2.	Sea-Floor Spreading	Arthur Holmes
3.	Plate tectonic theory	McKenzie and Parker
4.	Convectional Current Theory	Harry Hess

How many of the above pairs is/are correct?

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

Ans: (b)

Explanation:

- **Pair 1 is correct:** Alfred Wegener put forth a comprehensive argument in the form of the continental drift. According to Wegener, all the continents formed a single continental mass and mega ocean surrounded the same. The super continent was named PANGAEA, which meant all earth. The mega-ocean was called PANTHALASSA, meaning all water. He argued that, around 200 million years ago, the super continent, Pangaea, began to split.
- **Pair 2 is incorrect:** American geophysicist Harry H. Hess first put forth the seafloor spreading theory in 1960. As the old crust pulls in different directions, magma wells up in the rift, causing seafloor spreading. A new crust is formed when the magma is cooled by cold seawater.
- **Pair 3 is correct:** McKenzie and Parker proposed the plate tectonics idea in 1967. In 1968, Morgan went on to describe the hypothesis. According to this theory, the earth's lithosphere is divided into separate plates, each of which is floating on a ductile layer known as the asthenosphere, the uppermost portion of the mantle. Over the asthenosphere, plates travel horizontally as inflexible units.
- **Pair 4 is incorrect:** Arthur Holmes in 1930s discussed the possibility of convection currents operating in the mantle portion. According to this theory, the extreme heat generated by radioactive chemicals in the mantle seeks a way to escape and causes convection currents to emerge in the mantle.

Q29. Which of the following best explains the term "Quasar"?

(a) Group of asteroids that share Jupiter's orbit around the sun.
(b) Rotating neutron stars observed to have pulses of radiation at very regular intervals.
(c) When a meteoroid survives a trip through the atmosphere and hits the ground.
(d) Compact area in the centre of a massive galaxy that is around a supermassive black hole.

Ans: (d)

Explanation:

- **Statement 1 is incorrect:** Trojan Asteroids are group of asteroids that share Jupiter's orbit around the sun. These are mysterious space rocks gravitationally trapped in Jupiter's orbit around the Sun.
- **Statement 2 is incorrect:** Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds. They have very strong magnetic fields which funnel jets of particles out along the two magnetic poles.
- **Statement 3 is incorrect:** When a meteoroid survives a trip through the atmosphere and hits the ground are known as Meteorites.

- **Statement 4 is correct:** Quasar is the Compact area in the centre of a massive galaxy that is around a supermassive black hole. They are some of the brightest objects in the universe and can be observed across the entire electromagnetic spectrum.

Q30. Consider the following statements:
1. Heliosphere is the giant bubble of solar wind around the sun and its planets.
2. The heliosphere shields the Solar System from ionizing radiation.
3. Heliopause is the boundary where the Sun's solar wind is stopped by the interstellar medium.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:
- **Statement 1 is correct:** The sun sends out a constant flow of charged particles called the solar wind, which ultimately travels past all the planets to some three times the distance to Pluto before being impeded by the interstellar medium. This forms a giant bubble around the sun and its planets, known as the heliosphere.
- **Statement 2 is correct:** As part of the interplanetary magnetic field, the heliosphere shields the Solar System from significant amounts of cosmic ionizing radiation; uncharged gamma rays are, however, not affected.
- The heliosphere is the magnetosphere, and outermost atmospheric layer of the Sun. It takes the shape of a vast, tailed bubble-like region of space.
- **Statement 3 is correct:** Heliopause is the boundary where the Sun's solar wind is stopped by the interstellar medium. The solar wind's strength is no longer great enough to push back the stellar winds of the surrounding stars.

Q31. Which of the following is/are indirect sources of information about the interior of earth?
1. Magnetic field
2. Meteors
3. Volcanic eruption
4. Seismic activity

Select the correct answer using the code given below.
(a) Only 1, 2, and 3
(b) Only 2, 3, and 4
(c) Only 1, 3, and 4
(d) Only 1, 2, and 4

Ans: (d)
Explanation:
Direct sources of information about the interior of earth:
- **Statement 3 is incorrect:** Direct sources are ones that can be observed directly. Surface rock, volcanoes, mining operations, deep ocean drilling projects, and integrated ocean drilling projects are some of the direct sources of Earth's interior.
- After an eruption, volcanic material is easily accessible for our examination. Since these materials are extracted from extremely deep depths, the quality of this material at great depth can be analysed directly.

Indirect sources of information about the interior of earth:
- **Statement 1 is correct:** Magnetic surveys provide information about the distribution of magnetic materials in the crustal portion, and thus, provide information about the distribution of materials in this part.

- **Statement 2 is correct:** Earth and meteorites originate from the same nebular cloud. Therefore, it is likely that their internal structures are comparable. The inner core of meteoroids is exposed when they descend to Earth.
- **Statement 4 is correct:** Seismic waves are the most important source available to understand the layered structure of the earth. Analysing the patterns of seismic wave reflection, refraction, and velocity change as they pass through the Earth can help us understand its interior structure.
- Gravitation gives us information about the distribution of mass in the crust of the earth.

Q32. Consider the following statements with reference to the "Earthquake":
1. The point on the surface nearest to the focus is known as hypocentre.
2. Tsunami is one of the major causes of earthquake.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (d)
Explanation:
- An earthquake is shaking of the earth. It is a natural event. It is caused due to release of energy, which generates waves that travel in all directions.
- **Statement 1 is incorrect:** The point where the energy is released is called the focus of an earthquake, alternatively, it is called the hypocentre. The energy waves travelling in different directions reach the surface. The point on the surface, nearest to the focus, is called epicentre.
- **Statement 2 is incorrect:** Earthquake is a natural hazard. Tsunami is the immediate hazardous effects of earthquake not a cause of earthquake.

Q33. Consider the following statements:
1. S-waves move faster than the P-wave and these are the first to arrive at the surface.
2. S-waves can travel through gaseous, liquid and solid materials while P-waves can only travel through Solid materials.
3. The shadow zone of S-wave is much larger than that of the P-waves.
4. P-waves vibrate parallel to the direction of the wave while S waves vibrate perpendicular to the wave direction.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (b)
Explanation:
- Body waves are generated due to the release of energy at the focus and move in all directions travelling through the body of the earth.
- There are two types of body waves. They are called P and S-waves.
- **Statement 1 is incorrect:** P-waves move faster and are the first to arrive at the surface. These are also called 'primary waves. The P-waves are similar to sound waves. S-waves arrive at the surface with some time lag. These are called secondary waves.
- **Statement 2 is incorrect:** P-Wave can travel through gaseous, liquid and solid materials. An important fact about S-waves is that they can travel only through solid materials.
- **Statement 3 is correct:** The S-wave shadow zone covers a total of 154 degrees on the Earth's surface, beginning at 103 degrees away from the origin of the earthquake. The P-wave shadow zone is a ring, ranging from 103 to 142 degrees away from the origin of the event. Hence shadow zone of S-wave is much larger than P-wave.

- **Statement 4 is correct:** P-waves vibrate parallel to the direction of the wave. This exerts pressure on the material in the direction of the propagation. The direction of vibrations of S-waves is perpendicular to the wave direction in the vertical plane. Hence, they create troughs and crests in the material through which they pass.

Q34. North Sea, share its border with which of the following countries?

1. Germany
2. Netherlands
3. Iceland
4. Scotland
5. Sweden

Select the correct answer using the code given below:

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

Ans: (b)

Explanation:

- The North Sea lies between Britian, Scotland, Denmark, Norway, Germany, the Netherlands, Belgium and France. An epeiric sea on the European continental shelf, it connects to the Atlantic Ocean through the English Channel in the south and the Norwegian Sea in the north.
- The North Sea is one of the busiest sea areas when it comes to shipping, fisheries, oil & gas exploration, sand extraction, and offshore wind energy. **So, option (b) is correct.**

Q35: Consider the following pairs:

Strait	Different Landmasses
1. Skagerrak strait	Italy and Albania
2. Formosa strait	China and Philippines
3. Otranto Strait	Japan and South Korea

How many pairs given above is/are correct?

(a) Only one
(b) Only two

(c) All three
(d) None

Ans: (d)
Explanation:
Pair 1 is incorrect: The Skagerrak is a strait running between the Jutland peninsula of Denmark, the east coast of Norway and the west coast of Sweden, connecting the North Sea and the Kattegat sea. The strait is likely named after Skagen, a town near the northern cape of Denmark, with 'Rak' meaning 'straight waterway'.
Pair 2 is incorrect: The Taiwan Strait (also called the Formosa Strait) is a narrow body of water that separates the island of Taiwan from the southeastern coast of mainland China. The strait is an arm of the Pacific Ocean. It links the South China Sea, to the southwest, with the East China Sea, to the northeast. The strait was named Formosa ("Beautiful") by Portuguese navigators in the late 16th century although it is still known in the West by its European name, the Chinese and most Westerners use the name Taiwan Strait.
Pair 3 is incorrect: The Strait of Otranto connects the Adriatic Sea with the Ionian Sea and separates Italy from Albania.

Q36: Consider the following pairs:

Places in news	**Country**
1. Izu Island	Japan
2. Sakurajima	Philippines
3. Sulawesi	Taiwan

How many pairs given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (a)
Explanation:
Pair 1 is correct: A magnitude 6.1 earthquake struck Japan's Izu islands and consequently Japan issued tsunami alerts after the earthquake.
Pair 2 is incorrect: The volcano on Sakurajima Island, Kagoshima, Japan sending a plume of smoke 3,400 meters into the air above the crater. Sakurajima is one of Japan's most active volcanoes.
Pair 3 is incorrect: Indonesian island of Sulawesi is the world's eleventh largest island. Recently, a 5.9 magnitude earthquake hit the Minahassa Peninsula on Sulawesi, an Indonesian island.

Q37. Consider the following statements with reference to the shield volcanoes:
1. These volcanoes are mostly made up of basalt.
2. They become explosive if somehow water gets into the vent.
3. The Mount Fuji is the most famous example of shield volcanoes.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

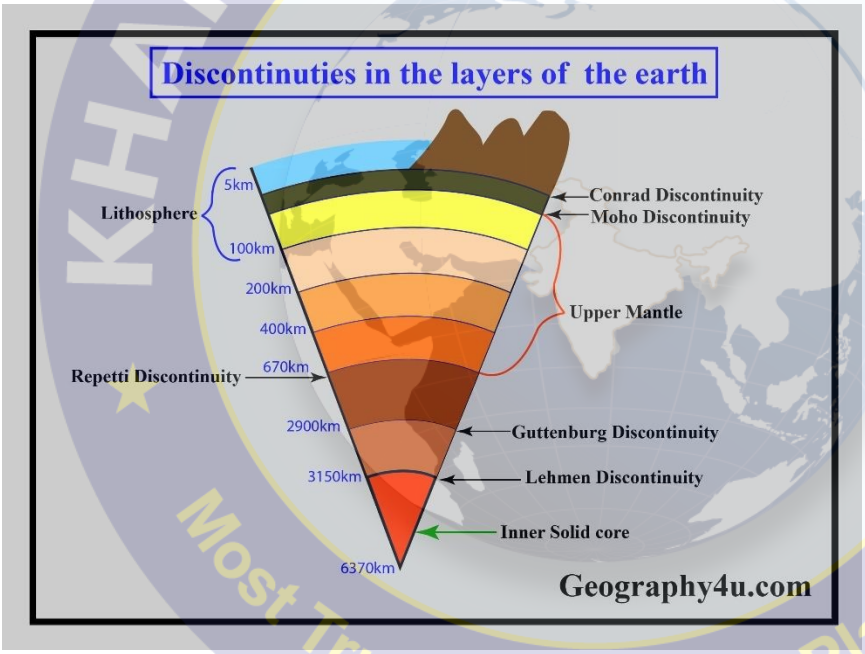
- **Statement 1 is correct:** A shield volcano is a type of volcano named for its low profile, resembling a shield lying on the ground. These volcanoes are mostly made up of basalt, a type of lava that is very fluid when erupted.
- **Statement 2 is correct:** They become explosive if somehow water gets into the vent; otherwise, they are characterised by low-explosivity.

- The upcoming lava moves in the form of a fountain and throws out the cone at the top of the vent and develops into cinder cone.
- **Statement 3 is incorrect:** Barring the basalt flows, the shield volcanoes are the largest of all the volcanoes on the earth. The Hawaiian volcanoes are the most famous examples. Mount Fuji is an example of composite volcano.

Q38. Consider the following statements:
1. Mohorovicic Discontinuity divides the outer core and the inner core
2. Guttenberg Discontinuity divides the upper and lower crust
3. Repetti Discontinuity divides the upper mantle and the lower mantle
4. Conrad Discontinuity divides the Earth's crust and the mantle

How many of the above statements is/are correctly matched?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (a)
Explanation:



- **Statement 1 is incorrect:** Mohorovicic discontinuity is the boundary between the crust and the mantle of Earth.
- **Statement 2 is incorrect:** Gutenberg discontinuity is the boundary between the core and the mantle.
- **Statement 3 is correct:** Repetti discontinuity is the boundary between the upper mantle and the lower mantle.
- **Statement 4 is incorrect:** Conrad discontinuity is the boundary between the upper crust and the lower crust.
- Lehmann discontinuity is the boundary between the outer core and the inner core.

Q39. Consider the following statements:
1. Continental margins is the zone of intense volcano activity.
2. Continental sediments that move beyond the margins get deposited in abyssal plains.
3. Mid-Oceanic Ridges include continental shelf, continental slope, continental rise and deep-oceanic trenches.

How many of the above statement is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- The ocean floor may be segmented into three major divisions based on the depth as well as the forms of relief. These divisions are continental margins, deep-sea basins and mid-ocean ridges.
- **Statement 1 is correct:** Continental Margins form the transition between continental shores and deep-sea basins. They include continental shelf, continental slope, continental rise and deep-oceanic trenches.
- **Statement 2 is correct:** Abyssal Plains are extensive plains that lie between the continental margins and mid-oceanic ridges. The abyssal plains are the areas where the continental sediments that move beyond the margins get deposited.
- **Statement 3 is incorrect:** Mid-Oceanic Ridges forms an interconnected chain of mountain system within the ocean. It is the longest mountain-chain on the surface of the earth though submerged under the oceanic waters. It is characterised by a central rift system at the crest. The rift system at the crest is the zone of intense volcanic activity.

Q40. Consider the following statements:
1. The ocean crust rocks are much younger than the continental rocks.
2. The age of the rocks decreases as one moves away from the crest of the ridge.
3. The sediments on the ocean floor are very thin.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- The mapping of the ocean floor and palaeomagnetic studies of rocks from oceanic regions revealed the following facts:
  - **Statement 1 is correct:** The ocean crust rocks are much younger than the continental rocks. The age of rocks in the oceanic crust is nowhere more than 200 million years old. Some of the continental rock formations are as old as 3,200 million years.
  - **Statement 2 is incorrect:** Rocks closer to the mid-oceanic ridges have normal polarity and are the youngest. The age of the rocks increases as one moves away from the crest of the ridge.
  - **Statement 3 is correct:** The sediments on the ocean floor are unexpectedly very thin. Scientists were expecting, if the ocean floors were as old as the continent, to have a complete sequence of sediments for a period of much longer duration. However, nowhere was the sediment column found to be older than 200 million years.
  - All along the mid-oceanic ridges, volcanic eruptions are common and they bring huge amounts of lava to the surface in this area.
  - The rocks equidistant on either side of the crest of mid-oceanic ridges show remarkable similarities in terms of period of formation, chemical compositions and magnetic properties.
  - The deep trenches have deep-seated earthquake occurrences while in the mid-oceanic ridge areas, the quake foci have shallow depths.

Q41. Which of the followings is/are not a type of glacial erosional landform?
1. Esker
2. D-fjord
3. Drumlin
4. Arete
5. Horn

Select the correct answer using the codes given below:
(a) Only 3, 4 and 5
(b) Only 1 and 3
(c) Only 2, 4 and 5

(d) 1, 2, 3, 4 and 5

Ans: (b)
Explanation:
Glacial Depositional Landforms:

- Eskers are ridges made of sands and gravels, deposited by glacial meltwater flowing through tunnels within and underneath glaciers, or through meltwater channels on top of glaciers.
- Drumlins are hills of sediment that have been streamlined by glacier flow. Thus, they are often elongated. They often occur together in fields, some with as many as several thousand individuals.

Glacial Erosional Landforms:

- A D-fjord is a long, deep, narrow body of water that reaches far inland. Fjords are often set in a U-shaped valley with steep walls of rock on either side. Fjords were created by glaciers. In the Earth's last ice age, glaciers covered just about everything.
- An arete is a narrow ridge of rock that separates two valleys. It is typically formed when two glaciers erode parallel U-shaped valley.
- Horn is a ridge that acquires a horn shape when the glacial activity cuts it from more than two sides.

Q42. Arrange the following cities from North to South?
1. Helsinki
2. Stockholm
3. Oslo
4. Copenhagen

Choose the correct answer from the following codes?
(a) 1-3-2-4
(b) 3-1-2-4
(c) 1-2-3-4
(d) 3-1-4-2

Ans: (a)
Explanation:

- Helsinki is the capital of the Finland. Located on the southernmost edge of the country, on the shores of the Gulf of Finland. Its Latitude coordinate is 60.192059 North.
- Oslo, the capital of Norway, sits on the country's southern coast at the head of the Oslo fjord. Its latitude is 59.9139° North.
- Stockholm, the capital of Sweden, encompasses 14 islands and more than 50 bridges on an extensive Baltic Sea archipelago. Its latitude is 59.3293° North.
- Copenhagen, Denmark's capital, sits on the coastal islands of Zealand and Amager. It's linked to Malmo in southern Sweden by the Oresund Bridge. Its latitude is 55.6761° North. ***So, option (a) is correct.***

Q43. Consider the following statements regarding Comoros?
1. It is situated in the Mozambique Channel.
2. It is a member of the Arab league.
3. It is a member state of the African Union.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:

- The Union of Comoros, a former French Colony, is an archipelago of three islands (Anjouan, Moheli, and the largest island, Grande Comore). A fourth island, Mayotte, is claimed by Comoros but administered by France.
- **Statement 1 is correct:** The Comoros are a group of islands at the northern end of the Mozambique Channel of the Indian Ocean, between Madagascar and the southeast African mainland, about 180 miles (290 km) off the eastern coast of Africa.
- **Statement 2 is correct:** It is the only country in the Arab world which is entirely in the Southern Hemisphere. It is a member of the Arab League.
- **Statement 3 is correct:** Comoros joined Organization of African unity (OAU) in 1975. Which is replaced by African Union (AU) in 2002. The African Union (AU) is made up of 55 Member States which represent all the countries on the African continent.

Q44. Consider the following statements regarding Lake Victoria?
1. It is the largest fresh water body in the world.
2. Kenya occupies largest area of the lake.
3. Equator passes through the lake.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None.

Ans: (a)
Explanation:
- Lake Victoria is the world's largest tropical lake and the largest lake in the African Great Lakes region. The lake supports the largest freshwater fishery in the world, producing 1 million tons of fish per year and employing 200,000 people in supporting the livelihoods of 4 million people.
- **Statement 1 is incorrect:** Lake Victoria is the largest African Great Lake by area, the world's largest tropical lake, and the second largest fresh water body in the world.
- **Statement 2 is incorrect:** The lake's area is divided among three countries: Tanzania occupies 49% , Uganda 45% and Kenya 6%.
- **Statement 3 is correct**: Africa's largest lake, Lake Victoria, is on the Equator. It is also called Victoria Nyanza.

Q45. Arrange the following cities from North to South?
1. Bishkek
2. Ashgabat
3. Dushanbe
4. Tashkent

Choose the correct answer from the following codes?
(a) 4-3-1-2
(b) 4-1-2-3
(c) 1-3-4-2
(d) 1-4-3-2

Ans: (d)
Explanation:
- Bishkek, the capital of Kyrgyzstan, borders Central Asia's Tian Shan range. The latitude of Bishkek is 42.882 North.
- Tashkent is the capital city of Uzbekistan. It's known for its many museums and its mix of modern and Soviet-era architecture. The latitude of Tashkent is 41.2995° North.
- Dushanbe, on the Varzob River, is the capital of Tajikistan. On the east bank of the river is Rudaki Park, named for the classical poet. The latitude of Dushanbe is 38.5598° North.
- Ashgabat is the capital of Turkmenistan. It's known for its white marble buildings and grandiose national monuments. The latitude of Ashgabat is 37.9601° North. ***So, option (d) is correct.***

Q46. Consider the following statements:
1. Weathering is a pre-requisite for mass movement.
2. No geomorphic agent participate in the process of mass movements.

Which of the statement given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:
Mass movement:

- Mass movement is the movement of rock and soil down slope under the influence of gravity. The movements of mass may range from slow to rapid, affecting shallow to deep columns of materials and include creep, flow, slide and fall. Gravity exerts its force on all matter, both bedrock and the products of weathering
- **Statement 1 is incorrect:** weathering is not a pre-requisite for mass movement though it aids mass movements. Mass movements are very active over weathered slopes rather than over unweathered materials.
- **Statement 2 is correct:** Mass movements are aided by gravity and no geomorphic agent like running water, glaciers, wind, waves and currents participate in the process of mass movements. That means mass movements do not come under erosion.
- Weak unconsolidated materials, thinly bedded rocks, faults, steeply dipping beds, vertical cliffs or steep slopes, abundant precipitation and torrential rains and scarcity of vegetation etc., favour mass movements.

Q47. Which of the following best explains the term "Exfoliation"?
(a) The peeling away of sheets of rock from a rock's surface due a range of physical and chemical processes.
(b) Slipping of one or several units of rock debris with a backward rotation.
(c) Sliding of individual rock masses down bedding, joint or fault surfaces.
(d) A mountain building process.

Ans: (a)
Exfoliation:

- Exfoliation is the term used to describe the peeling away of sheets of rock millimetres to meters in thickness from a rock's surface due a range of physical and chemical processes during exhumation and weathering.
- Flaking off of more or less curved sheets of shells from over rocks or bedrock results in smooth and rounded surfaces.
- It can occur due to expansion and contraction induced by temperature changes. Exfoliation domes and tors result due to unloading and thermal expansion respectively.

Q48. Consider the following statements:
1. Metamorphism is a process by which recrystallisation and reorganisation of minerals occur within a rock.
2. Lineation is arrangement in which some rocks grains or minerals get arranged in layers.
3. Banding is a structure in which materials of different groups arranged into alternating thin to thick layers.

How many of the above statements is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:

- **Statement 1 is correct:** Metamorphic rocks arise from the transformation of existing rock to new types of rock in a process called metamorphism. In other words, it can be explained as a process by which recrystallisation and reorganisation of minerals occur within a rock.
- **Statement 2 is correct:** Certain rocks undergo metamorphism, which causes the grains or minerals to arrange themselves into layers or lines. this kind of arrangement known as foliation or lineation.
- **Statement 3 is correct:** When materials or minerals from several groups are layered alternating from thin to thick. This type of structure as banding.

Q49. Consider the following statements:
1. The common elements in pyroxene are Calcium, aluminium, magnesium.
2. More than 50% of earth's crust is made up of pyroxene.
3. Pyroxene is commonly used in construction.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:
- Minerals are chemical substances that exist in nature and have atoms organised in three dimensions.
- **Statement 1 is correct:** The common elements in pyroxene are Calcium, aluminium, magnesium, iron and silicon.
- **Statement 2 is incorrect:** About 10% of the earth's crust is made up of pyroxene while Half of the earth's crust is composed of feldspar.
- **Statement 3 is correct:** Pyroxene is commonly found in meteorites. It is the trap rock of the construction industry. The dark mined in black granite is pyroxene.

Q50. Consider the following statements:
1. Basic rocks contain a high proportion of silica and are lighter in colour than acidic rocks.
2. High mountains are formed by acidic igneous rocks.
3. Basic igneous rocks are weathered relatively easily.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:
Igneous rocks:
- Igneous rocks form when magma (molten rock) cools and crystallizes, either at volcanoes on the surface of the Earth or while the melted rock is still inside the crust. All magma develops underground, in the lower crust or upper mantle, because of the intense heat there
- **Statement 1 is incorrect:** Compared to basic rocks, Acidic igneous rocks have a lighter colour and a higher silica content.
- **Statement 2 is correct:** Because silicon is abundant, acidic magma cools rapidly and does not flow or spread far. Acidic igneous rocks are used to construct high mountains. Due to low silica content, the parent material of basic igneous rocks cools slowly, causing them to flow and spread out across a large area. This flow and cooling give rise to plateaus
- **Statement 3 is correct:** Acid rocks are large, hard, compact, and weather-resistant while basic igneous rocks are not being very hard, these rocks are weathered relatively easily.
- Examples of acidic igneous rocks: Quartz, feldspar, and biotite.

- Examples of basic igneous rocks: Gabbro, dolerite, and basalt.

Q51. Consider the following pairs:

Plates	Geographical Location
1. Nazca plates	Between South America and Pacific plate
2. Philippine plate	Between the Asiatic and Pacific plate
3. Caroline plate	Between the Philippine and Indian plate

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:
Important minor plates:

- **Pair 1 is correct:** Nazca plate lies between South America and Pacific plate
- **Pair 2 is correct:** Philippine plate lies between the Asiatic and Pacific plate
- **Pair 3 is correct:** Caroline plate lies between the Philippine and Indian plate
- Cocos plate lies between Central America and Pacific plate.
- Arabian plate is the mostly the Saudi Arabian landmass.

Q52. Polar fleeing force relates to which of the following:
(a) Revolution of the Earth
(b) Rotation of the earth
(c) Gravitation
(d) Tide

Ans: (b)
Explanation:

- The term "polar fleeing forces" describes the forces which force an item or particle traveling in a circle away from the circle's centre.
- Wegener suggested that the movement responsible for the drifting of the continents was caused by pole-fleeing force and tidal force. The polar-fleeing force relates to the rotation of the earth.
- These forces are commonly encountered in rotational motion and are responsible for the outward acceleration experienced by an object moving in a circular path.

Q53. Which of the following support the continental drift theory?
1. Rocks of Same Age across the Oceans
2. Occurrence of rich placer deposits of gold.
3. Presence of identical fossils on either side of the marine barriers.

Select the correct code from the below:
(a) Only 1, and 2
(b) Only 2, and 3
(c) Only 1, and 3
(d) 1, 2, and 3

Ans: (d)
Explanation:
Evidence in Support of the Continental Drift:

- **Statement 1 is correct:** The radiometric dating methods developed in the recent period have facilitated correlating the rock formation from different continents across the vast ocean. The belt of ancient rocks of 2,000 million years from Brazil coast matches with those from western Africa.

- **Statement 2 is correct:** The occurrence of rich placer deposits of gold in the Ghana coast and the absolute absence of source rock in the region is an amazing fact. The gold bearing veins are in Brazil and it is obvious that the gold deposits of the Ghana are derived from the Brazil plateau when the two continents lay side by side.
- **Statement 3 is correct:** When identical species of plants and animals adapted to living on land or in fresh water are found on either side of the marine barriers, a problem arises regarding accounting for such distribution.
- Tillite is the sedimentary rock formed out of deposits of glaciers. The Gondwana system of sediments from India is known to have its counterparts in six different landmasses of the Southern Hemisphere.
- The shorelines of Africa and South America facing each other have a remarkable and unmistakable match.

Q54. Consider the following statements:
1. Natural levees are low, linear and parallel ridges of coarse deposits along the banks of rivers.
2. Point bars are found on the concave side of meanders of large rivers**.**

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (c)
Explanation:
- Natural levees and point bars are some of the important landforms found associated with floodplains.
- **Statement 1 is correct:** Natural levees are found along the banks of large rivers. They are low, linear and parallel ridges of coarse deposits along the banks of rivers, quite often cut into individual mounds.
- **Statement 2 is correct:** Point bars are also known as meander bars. They are found on the concave side of meanders of large rivers and are sediments deposited in a linear fashion by flowing waters along the bank. They are almost uniform in profile and in width and contain mixed sizes of sediments.

Q55. Which of the following best explains the term "karst topography"?
(a) Region lying between two hills or ridges and formed as a result of the lateral erosion by a river or a glacier.
(b) Natural landscape that is largely the result of chemical weathering by water.
(c) The peninsular region between various ranges.
(d) A mountain range is a series of peaks and valleys.

Ans: (b)
Explanation:
- **Statement 1 is incorrect:** A geomorphic feature lying between two hills or ridges and formed as a result of the lateral erosion by a river or a glacier is called a valley.
- **Statement 2 is correct:** Karst topography refers to natural landscape that is largely the result of chemical weathering by water, resulting in caves, sinkholes, cliffs, and steep-sided hills called towers. These features form when water picks up carbon dioxide from the atmosphere and ground to form carbonic acid.
- **Statement 3 is incorrect:** The large Deccan Plateau in southern India is located between the Western Ghats and the Eastern Ghats, and is loosely defined as the peninsular region between these ranges that is south of the Narmada River. To the north, it is bounded by the Satpura and Vindhya Ranges.
- **Statement 4 is incorrect:** The topography of mountain ranges and mountain belts depends in part on the amount of displacement on such faults, on the angles at which faults dip, on the degree to which crustal shortening occurs by faulting or by folding.

Q56: Consider the following pairs:

River	**Drains into**
1. St. Louis	Superior
2. Mackenzie	Winnipeg
3. St. Lawrence	Great Bear

How many pairs given above is/are ***incorrect***?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- **Pair 1 is correct:** The Saint Louis River is a river in the U.S. states of Minnesota and Wisconsin that flows into Lake Superior. Lake Superior is the largest freshwater lake in the world by surface area and the third-largest by volume, holding 10% of the world's surface fresh water.
- **Pair 2 is incorrect:** The Mackenzie River flows through northern Canada and empties into the cold waters of the Beaufort Sea in the Arctic Ocean. It is the longest river in Canada.
- **Pair 3 is incorrect:** Lawrence River, hydrographic system of east-central North America. It starts at the outflow of Lake Ontario and leads into the Atlantic Ocean in the extreme east of Canada, opening much of the interior of the North American continent.
- Great Bear Lake is a lake in the boreal forest of Canada. It is the largest lake entirely in Canada (Lake Superior and Lake Huron are larger but straddle the Canda-US border), the fourth-largest in North America.

Q57. Consider the following statements regarding Sahara Desert?
1. It is the largest desert of the world.
2. Bedouins is the major nomadic community of the desert.

Which of the statements given above is/are ***incorrect***?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (a)
Explanation:

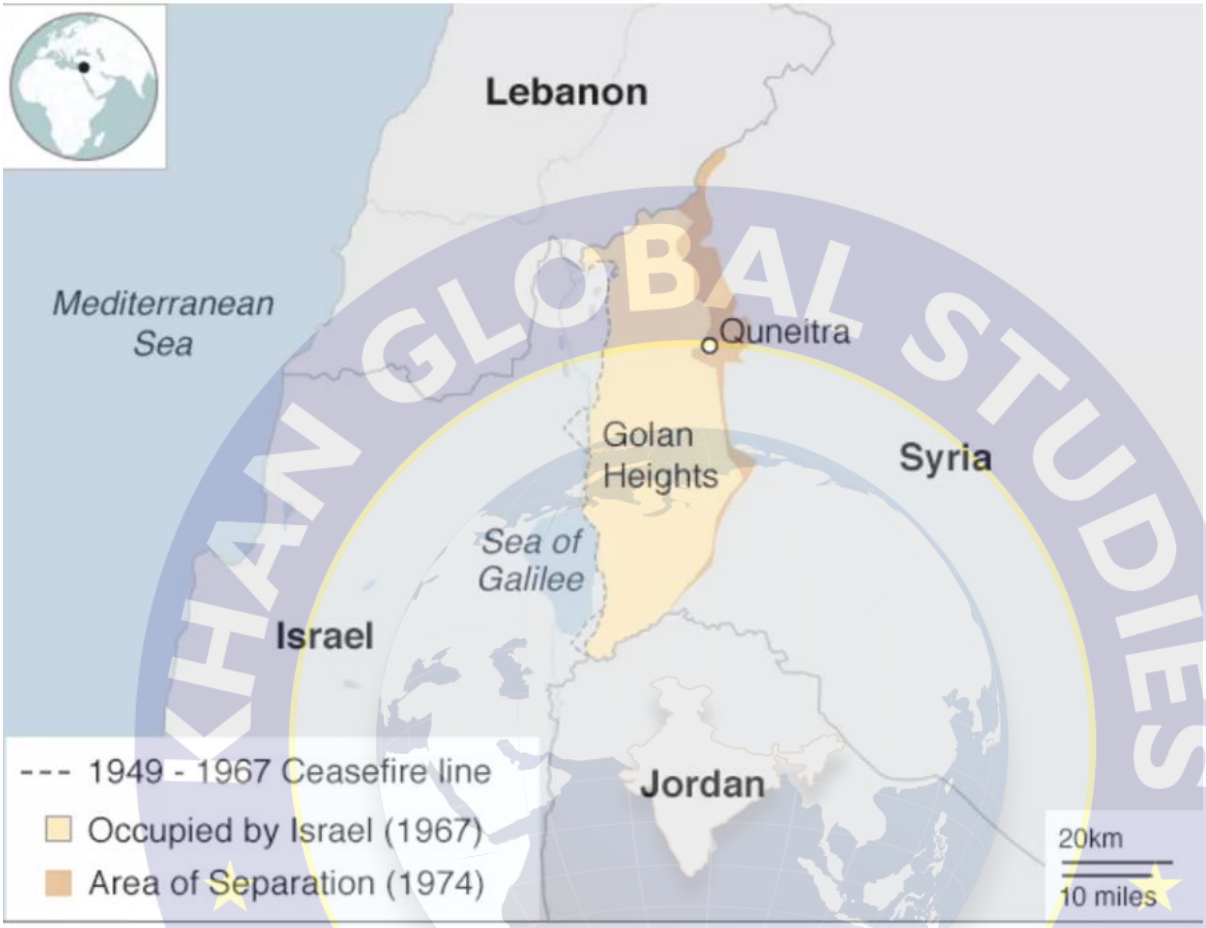
- The Sahara Desert is typically known for being hot. While this is true during the day, it gets really cold during the night. It is the hottest desert in the world – with one of the harshest climates. The average annual temperature is 30°C, whilst the hottest temperature ever recorded was 58°C. The area receives little rainfall, in fact, half of the Sahara Desert receives less than 1 inch of rain every year.
- **Statement 1 is incorrect:** Sahara desert is the largest hot desert in the world and the third-largest desert overall, smaller only than the deserts of Antarctica and the northern Arctic.
- **Statement 2 is correct:** Bedouin, Arabic-speaking nomadic peoples of the Middle Eastern deserts, especially of North Africa, the Arabian Peninsula, Egypt, Israel, Iraq, Syria and Jordan.

Q58. Golan Heights share its border with which of the following countries?
1. Syria
2. Jordan
3. Lebanon
4. Israel

Select the correct answer using the code given below:
(a) Only 1 and 4
(b) Only 2 and 4
(c) Only 2, 3 and 4
(d) 1, 2, 3 and 4

Ans: (d)
Explanation:

- The Golan Heights rises up to the east of the Sea of Galilee in the far north east of Israel. It supply Israel with over one third of its water, and, historically as the site of many important battles.
- Golan heights share its border with Israel, Jordan, Syria and Lebanon. ***So, option (d) is correct.***
- The Golan Heights contains some of Israel's most beautiful spots, shaped by the rugged and in places lunar landscape. Its great resource – water has created green landscapes, and some beautiful water-features.



Q59. Which of the following is part of geo-cultural region of Kurdistan?
1. Turkey
2. Iraq
3. Iran
4. Azerbaijan

Select the correct answer using the code given below:
(a) Only 1 and 2
(b) Only 1
(c) Only1, 2 and 3
(d) 1, 2, 3 and 4

Ans: (c)
Explanation:

- Kurdistan, broadly defined geographic region traditionally inhabited mainly by Kurds. It consists of an extensive plateau and mountain area, spread over large parts of what are now eastern Turkey, northern Iraq, and western Iran and smaller parts of northern Syria and Armenia. **So, option (c) is correct.**
- The Kurds are one of the indigenous peoples of the Mesopotamian plains and the highlands in what are now south-eastern Turkey, north-eastern Syria, northern Iraq, north-western Iran and south-western Armenia.

Q60: Consider the following pairs:

Cyclone	**Affected Area**
1. Michaung	Arabian sea
2.Hurrican Jova	Gulf of Mexico
3. Hamoon	Bay of Bengal

How many pairs given above is/are ***incorrect***?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- **Pair 1 is incorrect:** The Severe Cyclonic Storm "Michaung" (pronounced as Migjaum) over west central Bay of Bengal near south Andhra Pradesh coast.
- **Pair 2 is incorrect:** Jova originated from a tropical wave that entered the Pacific Ocean. Hurricane Jova was a powerful Category 5 hurricane, the first Pacific Hurricane to reach Category 5 strength since Willa in 2018.
- **Pair 3 is correct:** Very Severe Cyclonic Storm Hamoon was a relatively strong tropical cyclone that made landfall in Bangladesh. Hamoon formed from a low-pressure area over the west-central Bay of Bengal in October, 2023.

Q61. Consider the following statement:
1. A solar eclipse occurs when the Earth passes between the Sun and the Moon
2. A lunar eclipse occurs when the Moon passes between the Earth and the Sun.
3. A partial lunar eclipse happens when the Earth moves between the Sun and the Full Moon.
4. An annular eclipse occurs once every one or two years when the Sun and Moon are exactly in line with the Earth.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) Only three

(d) None

Ans: (b)
Explanation:

- **Statement 1 is incorrect:** A lunar eclipse occurs when the Earth passes between the Sun and the Moon, blocking the Sun's light and casting a shadow on the Moon.
- **Statement 2 is incorrect:** A solar eclipse occurs when the Moon passes between the Earth and the Sun, blocking the Sun's light and creating a shadow on the Earth's surface.
- **Statement 3 is correct:** A partial lunar eclipse happens when the Earth moves between the Sun and the Full Moon, but they are not precisely aligned. Only part of the Moon's visible surface moves into the dark part of the Earth's shadow.
- **Statement 4 is correct:** An annular eclipse occurs once every one or two years. when the Sun and Moon are exactly in line with the Earth, but the apparent size of the Moon is smaller than that of the Sun. Hence the Sun appears as a very bright ring, or annulus, surrounding the dark disk of the Moon.

Q62. Consider the following pairs:

	Landforms	**Definition**
1.	Stalactites	Icicle-shaped deposits form along ceilings and hang downward
2.	Stalagmites	Downward growing mound of weathered limestone surface found in karst regions
3.	Lapies	upward-growing mound of mineral deposits

How many pairs given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (a)
Explanation:

- **Pair 1 is correct:** Stalactites hang as icicles of different diameters. Normally they are broad at their bases and taper towards the free ends showing up in a variety of forms. Stalactites form along ceilings and hang downward.
- **Pair 2 is incorrect**: A stalagmite is an upward-growing mound of mineral deposits that have precipitated from water dripping onto the floor of a cave. Most stalagmites have rounded or flattened tips. There are many other types of mineral formations found in caves.
- **Pair 3 is incorrect:** Lapies can be defined as weathered limestone surface found in karst regions and consisting of etched, fluted, and pitted rock pinnacles separated by deep grooves. This rugged surface is formed by the solution of rock along joints and areas of greater solubility by water containing carbonic and humic acids.

Q63. Which of the following best explains the term "Inselberg"?
(a) A table-shaped area of rock found in arid and semi-arid areas.
(b) These are rock pillars which stand as resistant rocks above soft rocks.
(c) These are hollows formed by the removal of particles by wind.
(d) An isolated rock hill that rises abruptly from a gently sloping or virtually level surrounding plain.

Ans: (d)
Explanation:
Inselberg:

- An isolated rock hill, knob, ridge, or small mountain that rises abruptly from a gently sloping or virtually level surrounding plain.
- Inselberg is a German term that means an island mountain. It is also called a monadnock.

Q64. Consider the following:
1. Barchans
2. Loess
3. Ripple Marks

Which of the given above is/are depositional landforms?
(a) Only 1 and 2
(b) Only 2 and 3
(c) 1, 2 and 3
(d) None of the above

Ans: (c)
Explanation:

- **Statement 1 is correct:** A barchan dune is a crescent-shaped sand dune that faces the wind and is convex in shape formed by the constant blow of wind in one direction.
- **Statement 2 is correct**: In some parts of the world, windblown dust and silt blanket the land. This layer of fine, mineral-rich material is called loess. Loess is mostly created by wind, but can also be formed by glaciers.
- **Statement 3 is correct:** Ripple marks are ridges of sediment that form in response to wind blowing along a layer of sediment. They are form perpendicular to the wind direction and each ridge is roughly equidistant from the ripple mark on either side.

Q65. Consider the following statements:
1. A gorge is a deep valley with very steep to straight sides.
2. A canyon is characterised by steep step-like side slopes.
3. A gorge is almost equal in width at its top as well as its bottom.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:

- **Statement 1 is correct:** A gorge is a deep valley with very steep to straight sides. A number of natural forces form gorges. The most common is erosion due to streams or rivers. Streams carve through hard layers of rock, breaking down or eroding it.
- **Statement 2 is correct:** A canyon is characterised by steep step-like side slopes and may be as deep as a gorge. Canyon, deep, steep-walled, V-shaped valley cut by a river through resistant rock. Such valleys often occur in the upper courses of rivers, where the stream has a strong, swift current that digs its valley relatively rapidly.
- **Statement 3 is correct:** A gorge is almost equal in width at its top as well as its bottom.

- A gorge is often smaller than a canyon, although both words are used to describe deep, narrow valleys with a stream or river running along their bottom.

Q66: At one of the place in India, if you stand on the seashore and watch the sea, 'you will find that the sea water recedes from the shore line a few kilometres and comes back to the shore, twice a day, and you can actually walk on the sea floor when the water recedes. This unique phenomenon is seen at:
(a) Bhavnagar
(b) Bheemunipatnam
(c) Chandipur
(d) Nagapattinam

Ans: (c)
Explanation

- Chandipur is located in Balasore district, Odisa. Chandipur is a beach like no other. During low tides the beach recedes upto 5 KM offering visitors the opportunity to walk on the sea bed. This unique phenomenon helps the beach to support its equally unique biodiversity.It is home to the endangered horse shoe crabs, star fish, sea urchins to name a few. The water of the beach is muddy making it unsuited for bathing. **So, option (c) is correct.**

Q67. Mediterranean Sea share its border with which of the following country(ies)?
1. Jordan
2. Iraq
3. Lebanon
4. Syria

Select the correct answer using the code given below:
(a) Only 1, 2 and 3
(b) Only 2 and 3
(c) Only 3 and 4
(d) Only 1, 3 and 4

Ans: (c)
Explanation

- The Mediterranean Sea, a sea of the Atlantic Ocean, lies between the continents of Eurasia and Africa enclosed almost completely by land. It is bounded on the north by Europe, on the south by Africa, and on the east by Asia; and it joins with the Atlantic Ocean through the Strait of Gibraltar only eight miles (13 km) wide and 1,050 feet (320 meters) deep.
- The countries surrounding the Mediterranean and its marginal seas in clockwise order are Spain, France, Monaco, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece, Turkey, Syria, Lebanon, Israel, Palestine, Egypt, Libya, Tunisia, Algeria, Morocco, Malta, Cyprus and Gibraltar (U.K). ***So, option (c) is correct.***

Q68. Which one of the following is an artificial lake?
(a) Kodaikanal (Tamil Nadu)
(b) Kolleru (Andhra Pradesh)
(c) Nainital (Uttarakhand)
(d) Renuka (Himachal Pradesh)

Ans: (a)
Explanation:

- A lake is an area of variable size filled with water, localized in a basin, that is surrounded by land, apart from any river or other outlet that serves to feed or drain the lake.
- Artificial Lakes are constructed for industrial or agricultural use, for hydroelectric power generation or domestic water supply or for aesthetic or recreational purposes.

- Kodaikanal Lake also known as Kodai Lake, is a manmade lake located in the Kodaikanal city in Dindigul district in Tamil Nadu, Inda. Sir Vere Henry Levinge created the lake in 1863.**So, option (a) is correct.**
- Kolleru Lake is the largest freshwater lake and is located in Andhra Pradesh. Kolleru is located between Krishna and Godavari delta and covers an area of 308 km². The lake serves as a natural flood-balancing reservoir for these two rivers.
- Nainital Lake, famously known as Naini Lake is the major attraction of Nainital town as well of Uttarakhand. It is a natural lake surrounded by panoramic seven hills, Nainital lake is a favourite spot among romantic travellers around the world.
- Renuka lake is situated in the Sirmour district of Himachal Pradesh in India and it is 672 m above the sea level. It is a natural lake. Situated amidst lush green forests of Indian Himalayas, the surroundings of the Lake offers an excellent venue to tourists for the adventure sports like trekking and mountaineering.

Q69. Consider the following statements:
1. The Earth's magnetic field has reversed every few hundred thousand years
2. When the Earth was created more than 4000 million years ago, there was 54% oxygen and no carbon dioxide.
3. When living organisms originated, they modified the early atmosphere of the Earth.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2 and 3
(c) Only 1 and 3
(d) 1, 2 and 3

Ans: (c)
Explanation:
- **Statement 1 is correct:** As a matter of geological record, the Earth's magnetic field has undergone numerous reversals of polarity. We can see this in the magnetic patterns found in volcanic rocks, especially those recovered from the ocean floors. In the last 10 million years, there have been, on average, 4 or 5 reversals per million years.
- **Statement 2 is incorrect:** When earth was created around 4.6 billion years ago there was no atmosphere. The oxygen atoms in Earth's atmosphere were first formed in an old star, along with all the other elements that make up the Earth.
- **Statement 3 is correct:** Organisms have altered the composition of the atmosphere, affected the types and concentration of minerals and ions in the seas, and even worked and churned the soil. They heavily affected the atmosphere of earth.

Q70. Consider the following statements:
1. Most of the world's coral reefs are in tropical waters.
2. More than one-third of the world's coral reefs are located in the territories of Australia, Indonesia and Philippines.
3. Coral reefs host far more number of animal phyla than those hosted by tropical rainforests.

Which of the statements given above is/are correct?
(a) Only 1 and 2
(b) Only 3
(c) Only 1 and 3
(d) 1, 2 and 3

Ans: (d)
Explanation:
- **Statement 1 is correct:** Coral reefs flourish in ocean waters that provide few nutrients. They are most commonly found at shallow depths in tropical waters, but deep water and cold water coral reefs exist on smaller scales in other areas.
- **Statement 2 is correct:** The Coral Triangle is a marine area located in the western Pacific Ocean. It includes the waters of Indonesia, Malaysia, the Philippines, Papua New Guinea, Timor Leste and Solomon Islands. This region is more suitable for the growth of the coral reefs. The Great Barrier Reef is the world's

largest coral reef system, composed of over 2,900 individual reefs and 900 islands stretching for over 2,300 kilometres. The Philippine Coral Reef tank is one of the deepest and largest displays of living coral in the world.

- **Statement 3 is correct:** Corals are anthozoans, the largest class of organisms within the phylum Cnidaria. Comprising over 6,000 known species. So they host more number of animal phyla than tropical rainforest.

Q71. Consider the following statements with reference to the "exogenic geomorphic processes":
1. The exogenic processes derive their energy from sun.
2. Temperature is one of the important climatic events that control exogenic geomorphic processes.
3. Diastrophism and volcanism are exogenic geomorphic processes.

How many statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:

- **Statement 1 is correct:** The exogenic processes derive their energy from atmosphere determined by the ultimate energy from the sun and also the gradients created by tectonic factors.
- **Statement 2 is correct:** Temperature and precipitation are the two important climatic elements that control various exogenic processes.
- **Statement 3 is incorrect:** Diastrophism and volcanism are endogenic geomorphic processes. Weathering, mass wasting, erosion and deposition are exogenic geomorphic processes.

Q72. Which of the following is not associated with chemical weathering?
1. Carbonation
2. Hydration
3. Gravitational force
4. Reduction

Select the correct answer using the code given below:
(a) Only 1, 2 and 4
(b) Only 3
(c) Only 2 and 3
(d) 1, 2, 3 and 4

Ans: (a)
Explanation:

- **Statement 1 is incorrect**: Carbonation is the chemical reaction of carbon dioxide to give carbonates, bicarbonates, and carbonic acid.
- **Statement 2 is incorrect:** Hydration is a form of chemical weathering in which the chemical bonds of the mineral are changed as it interacts with water.

- **Statement 3 is correct:** Gravitational force is a type of physical weathering which include various forces such as overburden pressure, load and shearing stress.
- **Statement 4 is incorrect:** Reduction takes place when oxidised minerals are placed in an environment where oxygen is absent. Such conditions exist usually below the water table, in areas of stagnant water and waterlogged ground.

Q73. Match List-I with List-II :

List-I Atmospheric Layers	List-II Special characteristic
A. Ionosphere	1. Reflects Radio Waves
B. Troposphere	2. Ozone layer
C. Stratosphere	3. Enriched with lighter gases
D. Exosphere	4. Region of mixing

Choose the correct answer using the following codes:
(a) A-2; B-3; C-4; D-1
(b) A-1; B-2; C-3; D-4
(c) A-3; B-1; C-2; D-4
(d) A-1; B-4; C-2; D-3

Ans: (d)
Explanation:

- The troposphere is the lowermost layer of the atmosphere. This layer contains dust particles and water vapour. Troposphere means "region of mixing" and is so named because of vigorous convective air currents within the layer. All changes in climate and weather take place in this layer. The temperature in this layer decreases at the rate of 1°C for every 165m of height. This is the most important layer for all biological activity.
- The stratosphere is found above the tropopause and extends up to a height of 50 km. One important feature of the stratosphere is that it contains the ozone layer. This layer absorbs ultra-violet radiation and shields life on the earth from intense, harmful form of energy.
- The ionosphere is located between 80 and 400 km above the mesopause. It contains electrically charged particles known as ions, and hence, it is known as ionosphere. Radio waves transmitted from the earth are reflected back to the earth by this layer. Temperature here starts increasing with height.
- The uppermost layer of the atmosphere above the thermosphere is known as the exosphere. Earth's surface the chemical composition of air becomes strongly dependent on altitude and this atmosphere layer enriched with lighter gases (atomic oxygen, helium and hydrogen).***So, option (d) is correct.***

Q74. Consider the following statements:
Statement-I: Troposphere is thick on equator and thinner on poles.
Statement-II: In troposphere heat is transported to great heights by strong convectional currents.

Which one of the following is correct with respect to the above statements?
(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct and Statement-II is incorrect
(d) Statement-I is incorrect and Statement-II is correct

Ans: (a)
Explanation:
The troposphere is the lowermost layer of the atmosphere. Its average height is 13 km and extends roughly to a height of 8 km near the poles and about 18 km at the equator. Thickness of the troposphere is greatest at the equator because heat is transported to great heights by strong convectional currents. Statement-I and Statement-II both are correct and Statement-II is correct explanation of Statement-I. ***So, option (a) is correct***.

Q75: Consider the following statements:
Statement-I: The equatorial region of the ocean has lower salinity.

Statement-II: Equatorial region is characterized by heavy rainfall, cloudiness and humidity.

Which one of the following is correct in respect of the above statements?
(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct and Statement-II is incorrect
(d) Statement-I is incorrect and Statement-II is correct

Ans: (a)
Explanation:

- Salinity is the term used to define the total content of dissolved salts in sea water. It is calculated as the amount of salt (in gm) dissolved in 1,000 gm (1 kg) of seawater. It is usually expressed as parts per thousand (‰) or ppt.
- Equatorial region, characterized by consistently high temperatures, with plentiful precipitation, heavy cloud cover, and high humidity, with very little annual temperature variation. The equatorial region of the ocean has lower salinity than the tropical region. This is because although evaporation is high at the equator, precipitation is also high. High rainfall reduces salinity in equatorial regions, hence overall the salinity is less than in tropical regions. Equatorial regions' high cloud cover and humidity slow the rate of evaporation, resulting in low salinity. Hence, Statement-I and Statement-II both are correct and Statement-II is correct explanation of Statement-I. ***So, option (a) is correct.***

Q76. Consider the following statements with reference to the alluvial soils:
1. Alluvial soils are depositional soils, transported and deposited by rivers and streams.
2. Alluvial soils are generally rich in phosphorous but poor in potash.
3. Bhangar represents a system of newer alluvium and deposited by floods annually deposited by floods annually, which enriches the soil by depositing fine silts.

How many of the statements given above is/are ***incorrectly*** matched?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (b)
Explanation:
Statement (1) is correct: Alluvial soils are depositional soils, transported and deposited by rivers and streams. Alluvial soils are widespread in the northern plains and the river valleys. These soils cover about 40 per cent of the total area of the country.
Statement (2) is incorrect: The alluvial soils vary in nature from sandy loam to clay. They are generally rich in potash but poor in phosphorous.
Statement (3) is incorrect: In the Upper and Middle Ganga plain, two different types of alluvial soils have developed, viz. Khadar and Bhangar. Khadar is the new alluvium and is deposited by floods annually, which enriches the soil by depositing fine silts. Bhangar represents a system of older alluvium (not newer alluvium), deposited away from the flood plains. Both the Khadar and Bhangar soils contain calcareous concretions (Kankars).

Q77. Which of the following statement is incorrect?
(a) Red soils are rich in iron.
(b) Black soils are rich in phosphorus, nitrogen and organic matters.
(c) Usara soils contain a larger proportion of sodium, potassium and magnesium.
(d) Red soils are suitable for cultivation of pulses and coarse grains.

Ans: (b)
Explanation:
Option (a) and (d) is correct: Red soil contains a high percentage of iron content, which is responsible for its colour. This soil is deficient in nitrogen, humus, phosphoric acid, magnesium, and lime but fairly rich in potash, with its pH ranging from neutral to acidic. It is suitable for growing groundnuts, pulses, millet, coarse grain, cotton and tobacco.

Option (b) is incorrect: Chemically, the black soils are rich in lime, iron, magnesia and alumina. They also contain potash. But they lack phosphorus, nitrogen and organic matter.
Option (c) is correct: Saline soils are also known as Usara soils. Saline soils contain a larger proportion of sodium, potassium and magnesium, and thus, they are infertile, and do not support any vegetative growth. They have more salts, largely because of dry climate and poor drainage. They occur in arid and semi-arid regions, and in waterlogged and swampy areas.

Q78. In which of the following type climate, rainfall occurs throughout the year:
1. Equatorial type climate
2. British type climate
3. China type climate
4. Siberian type climate

Select the correct answer using the codes given below:
(a) Only 1 and 3
(b) Only 1, 2 and 3
(c) Only 1 and 3
(d) 1, 2, 3 and 4

Ans: (b)
Explanation:
Statement (1) is correct: Equatorial type climate is found near the equator. The major areas are the Amazon Basin in South America, western equatorial Africa and the islands of East Indies. Significant amount of rainfall occurs in every month of the year as thunder showers in the afternoon. The temperature is uniformly high and the annual range of temperature is negligible.
Statement (2) is correct: The British type of climate has adequate rainfall throughout the year with a tendency towards a slight winter or autumn maximum from cyclonic sources. Since the rain-bearing winds come from the west, the western margins have the heaviest rainfall. The amount decreases eastwards with in creasing distance from the sea.
Statement (3) is correct: The Warm Temperate Eastern Margin (China Type) Climate is typified by a warm moist summer and a cool, dry winter. Areas which experience this climate are very densely populated. Another important feature is the fairly uniform distribution of rainfall throughout the year. There is rain every month, except in the interior of central China, where there is a distinct dry season. Rain comes either from convectional sources or as orographic rain in summer, or from depressions in prolonged showers in winter. Local storms, e.g. typhoons, and hurricanes, also occur.
Statement (4) is incorrect: The Siberian type Climate is experienced only in the northern hemisphere where the continents within the high latitudes have a broad east-west spread. On its poleward side, it merges into the Arctic tundra of Canada and Eurasia at around the Arctic Circle. Southwards, the climate becomes less severe and fades into the temperate Steppe climate. The interiors of the Eurasian continent are so remote from maritime influence that annual precipitation cannot be high. Generally speaking, a total of 15 to 25 inches is typical of the annual precipitation of this sub-Arctic type of climate. It is quite well distributed throughout the year, with a summer maximum from convectional rain when the continental interiors are greatly heated (mid-summer). In winter the precipitation is in the form of snow, as mean temperatures are well below freezing all the time.

Q79. Arrange the following gases in decreasing order of their share in the atmosphere.
1. Carbon Dioxide
2. Nitrogen
3. Argon
4. Helium

Select the correct answer using the code given below.
(a) 2-1-3-4
(b) 2-1-4-3
(c) 2-4-1-3
(d) 2-3-1-4

Ans: (d)
Explanation:
The atmosphere is composed of gases, water vapour and dust particles. The proportion of gases changes in the higher layers of the atmosphere in such a way that oxygen will be almost in negligible quantity at the height of 120 km. Similarly, carbon dioxide and water vapour are found only up to 90 km from the surface of the earth. Details of various gases in the air, particularly in the lower atmosphere are following:

Constituent	*Formula*	*Percentage by Volume*
Nitrogen	N_2	78.08
Oxygen	O_2	20.95
Argon	Ar	0.93
Carbon dioxide	CO_2	0.036
Neon	Ne	0.002
Helium	He	0.0005
Krypto	Kr	0.001
Xenon	Xe	0.00009
Hydrogen	H_2	0.00005

Q80. Match List-I with List-II and select the correct answer from the codes given below:

List-I (Ocean)	List-II (Currents)
A. Indian	1. Gulf Stream
B. North Atlantic	2. Kuroshio
C. Pacific	3. Agulhas
D. South Atlantic	4. Benguela Current

Codes:
(a) A-2; B-3; C-4; D-1
(b) A-1; B-2; C-3; D-4
(c) A-3; B-1; C-2; D-4
(d) A-1; B-4; C-2; D-3

Ans: (c)
Explanation:

- The Gulf Stream Originating in the Gulf of Mexico, is a powerful western boundary current in the North Atlantic. Gulf stream (warm current) raises the temperature near the eastern coast of North America and the West Coast of Europe.
- The Kuroshio Current is a major western boundary current controlled by the North Pacific Gyre. Kuroshio Current is a north-flowing, warm ocean current on the west side of the North Pacific Ocean basin. Similar to the Gulf Stream in the North Atlantic, the Kuroshio is a powerful western boundary current that transports warm equatorial water poleward. Off the East Coast of Japan, it merges with the Oyashio Current to form the North Pacific Current.
- The Agulhas Current is the western boundary current of the southwest Indian Ocean. It flows south along the east coast of Africa from 27°S to 40°S.
- On the West coast of the South African continent, the South Atlantic Drift bifurcates, and one of its branches flows along the west coast of Africa. This current is called Benguela current. It is a cold oceanic current and brings the cold polar water of the South Atlantic Drift into tropical latitudes. **So, option (d) is correct.**

Q81. In terms of percentage, arrange the share of the following sources of freshwater in decreasing order.
1. Ice Caps and Glaciers
2. Lakes
3. Atmosphere
4. Streams and rivers

Select the correct answer using the code given below.
(a) 3-4-2-1
(b) 4-3-2-1

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

Ans: (c)
Explanation:

- The distribution of water on earth is quite uneven. Many locations have plenty of water while others have very limited quantity. Table shows distribution of water on the surface of the earth. About 71 per cent of the planetary water is found in the oceans. The remaining is held as freshwater in glaciers and icecaps, groundwater sources, lakes, soil moisture, atmosphere, streams and within life. ***So, option (c) is correct.***

Reservoir	*Volume (Million Cubic km)*	*Percentage of the Total*
Oceans	1,370	97.25
Ice Caps and Glaciers	29	2.05
Groundwater	9.5	0.68
Lakes	0.125	0.01
Soil Moisture	0.065	0.005
Atmosphere	0.013	0.001
Streams and Rivers	0.0017	0.0001
Biosphere	0.0006	0.00004

Q 82. With reference to soil erosion, consider the following statements:
1. Wind erosion is significant in arid and semi-arid regions.
2. Gully erosion is common on steep slopes.
3. Soil erosion cause frequent floods and damage to agricultural lands.

How many of the statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (c)
Explanation:

- **Statement (1) is correct:** Wind and water are powerful agents of soil erosion because of their ability to remove soil and transport it. Wind erosion is significant in arid and semi-arid regions.
- **Statement (2) is correct:** Water erosion which is more serious and occurs extensively in different parts of India, takes place mainly in the form of sheet and gully erosion. Gullies deepen with rainfall, cut the agricultural lands into small fragments and make them unfit for cultivation. A region with a large number of deep gullies or ravines is called a badland topography.
- **Statement (3) is correct:** Eroded materials are carried down to rivers and they lower down their carrying capacity, and cause frequent floods and damage to agricultural lands.

Q 83. Warm moist summer, cool dry winter, great annual temperature range, rainfall throughout the year is the characteristic feature of which type of climate?
(a) Equatorial climate
(b) Savana climate
(c) China type climate
(d) Mediterranean climate

Ans: (c)
Explanation:

- China type climate type of climate is found on the eastern margins of continents in warm temperate latitudes, just outside the tropics. The Warm Temperate Eastern Margin Climate is typified by a warm moist summer and a cool, dry winter.
- The mean monthly temperature varies between 40°F. and 78°F. and is strongly modified by maritime influence. Occasionally, the penetration of cold air from the continental interiors may bring down the temperature to freezing point. Though frosts are rare they occasionally occur in the colder interiors. For most of the time, it is pleasantly warm.
- Another important feature is the fairly uniform distribution of rainfall throughout the year. There is rain every month, except in the interior of central China, where there is a distinct dry season. Rain comes either from convections sources or as orographic rain in summer, or from depressions in prolonged showers in winter. ***So, option (c) is correct.***

Q 84. Campos and Llanos grassland are found in which climatic zone?
(a) Monsoon
(b) Savana
(c) Equatorial
(d) Temperate climatic zone

Ans: (b)
Explanation:
The Savanna or Sudan Climate is a transitional type of climate found between the equatorial forests and the trade wind hot deserts. It is confined within the tropics and is best developed in the Sudan where the dry and wet seasons are most distinct, hence its name the Sudan Climate. In South America, there are two distinct regions of savanna north and south of the equator, namely the llanos (Venezuela) of the Orinoco basin and the campos of the Brazilian Highlands. Tropical grasslands are known as campos in Brazil, llanos in Venezuela and savanna in East Africa. The Campos, grassland with few trees or shrubs except near streams, lies between 24°S and 35°S; it includes parts of Brazil, Paraguay and Argentina, and all of Uruguay. Grassland -based livestock production is very important, based on the natural grassland that covers most of the area. ***So, option (b) is correct.***

Q 85: Consider the following statements:
1. Coral reefs developed along the continental margins or along the islands are called Atoll.
2. A coral island is a ring-shaped coral reef, which is partially or completely surrounded by salt water.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:
- Coral polyps are short-lived microscopic organisms, which live in colonies. They flourish in shallow, mud-free and warm waters. They secrete calcium carbonate. The coral secretion and their skeletons from coral deposits in the form of reefs: they are mainly of three kinds: barrier reef. fringing reef and atolls.
- **Statement (1) is incorrect:** Coral reefs developed along the continental margins or along the islands are called Fringing reefs. Fringing reefs are reefs that grow directly from a shore. They are located very close to land, and often form a shallow lagoon between the beach and the main body of the reef.
- **Statement (2) is correct**. A coral island is a ring-shaped coral reef, which is partially or completely surrounded by salt water. A lagoon is formed in the submerged part of the island and palm trees grow in it, creating a beautiful landscape. Coral reefs are important because they bring in billions of dollars to our economy through tourism, protect coastal homes from storms, support promising medical treatments, and provide a home for millions of aquatic species.

Q86. Which one of the following is included in biosphere?
(a) Only plants

(b) Only animals
(c) All living organisms
(d) All living and non-living factors

Ans: (d)
Explanation:

- The biosphere is made up of the parts of Earth where life exists. The biosphere extends from the deepest root systems of trees to the dark environment of ocean trenches, to lush rain forests and high mountaintops. The biosphere includes all the living components of the earth. It consists of all plants and animals, including all the microorganisms that live on the planet earth and their interactions with the surrounding environment. Thus, Biosphere is composed of living organisms and non-living factors from which the organisms derive energy and nutrients. **So, option (d) is correct.**

Q 87: Consider the following statements:
1. Temperature decreases with increase in elevation is called Inversion of temperature.
2. In equatorial region, temperature inversion is normal throughout the year.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (d)
Explanation:
Statement (1) is incorrect: Temperature decreases with increase in elevation. It is called normal lapse rate. At times, the situations is reversed (i.e. Temperature increase with increase in elevation) and the normal lapse rate is inverted. It is called Inversion of temperature. Inversion is usually of short duration but quite common nonetheless. A long winter night with clear skies and still air is ideal situation for inversion.
Statement (2) is incorrect: Over polar areas, temperature inversion is normal throughout the year not in equatorial regions.

Q88: Match List-I with List-II and select the correct answer by using the codes given below the lists:

List-I (Geographical feature)	List-II (Special Characteristic)
A. Isobar	1. The percentage of visible light reflected by an object
B. Isotherm	2. Temperature increase with increase in elevation
C. Temperature inversion	3. The lines joining the places of equal pressure
D. Albedo	4. The lines joining the places of equal temperature

Codes:
(a) A-3; B-4; C-1; D-2
(b) A-3; B-4; C-2; D-1
(c) A-4; B-3; C-2; D-1
(d) A-4; B-3; C-1; D-2

Ans: (b)
Explanation:

- **Isotherm**: A line on a map or chart of the earth's surface connecting places having the same/equal temperature.
- **Isobar:** A line on a map or chart of the earth's surface connecting places having the same/equal Pressure.
- **Temperature inversion:** A temperature inversion is a layer in the atmosphere in which air temperature increases with height.

- **Albedo:** Albedo, fraction of light that is reflected by a body or surface. **So, option (b) is correct.**

Q 89: Consider the following statements:
Statement-I: Cyclone do not originate in South Atlantic and south-eastern Pacific Ocean.
Statement-II: Over the South Atlantic and south-eastern Pacific Ocean Coriolis force is zero.

Which one of the following is correct in respect of the above statements?
(a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
(b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
(c) Statement-I is correct and Statement-II is incorrect
(d) Statement-I is incorrect and Statement-II is correct

Ans: (c)
Explanation:
Statement (I) is correct: Cyclones are low-pressure systems that derive their energy from warm ocean waters. Cyclone do not originate in South Atlantic and south-eastern Pacific Ocean.
Statement (II) is incorrect: Over the South Atlantic and south-eastern Pacific Ocean Coriolis force is not zero. The Coriolis force is zero at the Equator.
Cyclone do not originate in South Atlantic and south-eastern Pacific Ocean. Cyclones are low-pressure systems that derive their energy from warm ocean waters. Therefore, the main reason for the absence of cyclones in the South Atlantic and South-Eastern Pacific regions in tropical latitudes is the low sea surface temperature. Hence, Statement-I is correct and Statement-II is incorrect.

Q 90: Which one of the following is/are *not correctly* matched?
(1) Bora — Italy
(2) Khamsin — Egypt
(3) Purga/Buran — Russia
(4) Brickfielder — Australia

Select the correct answer using the option given below:
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (d)
Explanation
- **Bora:** Bora, originally defined as a very strong cold wind that blows from the northeast onto the Adriatic region of Italy, Slovenia, and Croatia.
- **Khamsin:** The Khamsin is a very dry, hot and sandy wind that blows with great speeds from south to south-east, affecting Egypt and the eastern countries surrounding the Mediterranean Sea (also known as Levant).
- **Purga/Buran:** Extremely cold wind full of ice and snow blowing across Russia and eastern Asia. In tundra region, it is also known as Purga. In Alaska this severe north-easterly wind is known as Burga, bringing snow and ice pellets.
- **Brickfielder:** The Brickfielder is a strong, hot, dry and dusty wind in southern Australia. The Brickfielder usually occurs during summer and is mainly affecting southeast Australia's states of Victoria and New South Wales. So, option (d) is correct.

Q 91: Which of the following factors affect the weather of a place?
1. Latitude
2. Altitude
3. Precipitation
4. Ocean currents

Select the correct answer using the code given below.
(a) 1, 2, 3 and 4

(b) Only 2, 3 and 4
(c) Only 1, 2 and 3
(d) Only 1, 3 and 4

Ans: (a)
Explanation:
Weather refers to the short-term conditions of the lower atmosphere, such as precipitation, temperature, humidity, wind direction, wind speed, and atmospheric pressure. climate refers to atmospheric changes over longer periods of time, usually 30 years or more. Weather and climate are affected by factors such as Latitude**,** Altitude**,** Rain**,** Moisture**,** Ocean currents and Precipitation etc**. So, option (a) is correct.**

Q 92: Which of the following are the conditions for the emergence of a tropical cyclone?
1. Large variations in the vertical wind speed;
2. Sea surface temperature higher than 27° C
3. Presence of the Coriolis force
4. Diverging wind pattern near the ocean surface.

Select the correct answer using the code given below.
(a) 1, 2, 3 and 4
(b) Only 2, 3 and 4
(c) Only 2 and 3
(d) Only 1, 2, and 3

Ans: (c)
Explanation:
Tropical cyclones originate and intensify over warm tropical oceans. The conditions favourable for the formation and intensification of tropical storms are:

- **Statement (2) is correct:** Large sea surface with temperature higher than 27° C.
- **Statement (3) is correct:** Presence of the Coriolis force.
- **Statement (1) is incorrect** 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.
- **Statement (4) is incorrect:** Converging winds near the ocean surface forcing air to rise and form storm clouds.

Q 93: With reference to El Nino, which of the following statements are correct?
1. Unusual warming of surface waters in the western Pacific Ocean.
2. El Nino and the Indian Monsoon *rains are inversely related*.
3. During El-Nino, upwelling weakens or stops altogether at Peru coast.

Select the correct answer using the code given below.
(a) Only 1 and 2
(b) Only 2 and 3
(c) Only 1 and 3
(d) 1, 2 and 3

Ans: (b)
Explanation:
Statement (1) is incorrect: El Nino is a climate pattern that describes the unusual warming of surface waters in the eastern tropical Pacific Ocean. El Niño was recognized by fishers off the coast of Peru as the appearance of unusually warm water. El Niño events are indicated by sea surface temperature increases of more than 0.9° Fahrenheit for at least five successive three-month seasons.
Statement (2) is correct: El Nino refers to abnormal warming of surface waters in the equatorial Pacific Ocean, which tends to suppress monsoon rainfall in India. Warm water enters into the Indian ocean and reduce pressure gradient, weaken higher pressure of Indian ocean result in low rain fall.

Statement (3) is correct: During normal conditions, upwelling brings water from the depths to the surface; this water is cold and nutrient rich. The lack of upwelling during El Nino causes nutrients in water to drop which in turn hampers the development of marine life.

Q 94: Consider the following statements about drainage system of India:
1. Consequent streams does not follow the regional slope.
2. Most of the streams draining the coastal plains of India are the examples of consequent streams.

Which of the statements given above is/are correct?
(a) Only 1
(b) Only 2
(c) 1 and 2
(d) Neither 1 nor 2

Ans: (b)
Explanation:
Statement (1) is incorrect: Consequent streams are the first streams to be originated in a particular region. These streams have their courses in accordance with the initial slope of land surface. In other words, the consequent streams follow the regional slope.
Statement (2) is correct: The first streams to be initiated on a newly emerged coastal plain are consequent streams which are parallel to each other and thus form parallel drainage pattern. The longest stream of the whole system of consequent streams is called master consequent. Most of the streams draining the coastal plains of India are the examples of Consequent streams.

Q 95: Consider the following statements:
1. The drainage pattern resembling the branches of a tree is known as trellis.
2. When the rivers originate from a hill and flow in all directions, the drainage pattern is known as centripetal.
3. When the primary tributaries of rivers flow parallel to each other and secondary tributaries join them at right angles, the pattern is known as dendritic.

How many of the statements given above is/are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Ans: (d)
Explanation:
Statement (1) is incorrect: The drainage pattern resembling the branches of a tree is known as dendritic (not trellis) the examples of which are the rivers of northern plain.
Statement (2) is incorrect: When the rivers originate from a hill and flow in all directions, the drainage pattern is known as radial. When the rivers discharge their waters from all directions in a lake or depression, the pattern is known as centripetal.
Statement (3) is incorrect: When the primary tributaries of rivers flow parallel to each other and secondary tributaries join them at right angles, the pattern is known as trellis (not dendritic).

Q 96. Consider the following rivers:
1. Narmada
2. Tapi
3. Damodar
Which of the above rivers flows through a rift valley?

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

Ans: (b)
Explanation:
Narmada River rises near Amarkantak in Madhya Pradesh at an elevation of about 900 m and flows for about 1312 km before out falling into the Arabian Sea through the Gulf of Cambay. It is one of the rivers in India that flows in a rift valley, bordered by the Satpura and Vindhya ranges.
The Tapi is a river of central India. It is one of the major rivers of peninsular India with the length of around 724 km; it runs from east to west. Tapi river rises near Multai in the Betul district of Madhya Pradesh at an elevation of about 752 m and flows for about 724 km before outfalling into the Arabian Sea through the Gulf of Cambay. *Tapi* river also flows through the *rift valley*.
The Chota Nagpur Plateau is the source of the down warping that created the rift valley through which the Damodar River flows. Damodar River originates from the Chota Nagpur Plateau, flowing across the Indian states of Jharkhand and West Bengal. It enters Hoogly, a tributary of the Ganga, and is frequently referred to as the Sorrow of Bengal because of its ravaging floods in the plains of West Bengal. **So, option (b) is correct.**

Q97: Match List-I with List-II and select the correct answer by using the codes given below the lists

List-I (Dam)	List-II (River)
A. Baglihar Dam	1. Indus
B. Pakal Dul Dam	2. Jhelum
C. Uri	3. Marusudar
D. Nimoo Bazgo Dam	4. Chenab

Codes:
(a) A-1; B-3; C-2; D-4
(b) A-4; B-1; C-2; D-3
(c) A-1; B-2; C-3; D-4
(d) A-4; B-3; C-2; D-1

Ans: (d)
Explanation:

- Baglihar Dam, also known as Baglihar Hydroelectric Power Project, is a run-of-the-river power project on the Chenab River in the Ramban district of Jammu and Kashmir, India.
- The Pakal Dul Dam is concrete-face rock-fill dam on the Marusudar river, a tributary of the Chenab River, in Kishtwar district of the Indian Jammu and Kashmir. The primary purpose of the dam is hydroelectric power generation.
- *Uri Dam* is a 480 MW hydroelectric power station on the Jhelum River near Uri in Baramula district of the Jammu and Kashmir, India.
- *Nimoo* Bazgo Power Project is a run-of-the-river power project on the Indus River situated situated in Leh (Ladakh) part of Jammu and Kashmir. **So, option (d) is correct.**

Q98: What is the correct sequence of the rivers - Godavari, Cauvery, Mahanadi, Narmada and Tapti in the descending order of their lengths?
(a) Godavari - Mahanadi - Cauvery - Narmada - Tapti
(b) Godavari - Narmada - Mahanadi - Cauvery -Tapti
(c) Godavari - Cauvery - Narmada - Tapti - Mahanadi
(d) Narmada - Cauvery -Tapti - Godavari – Mahanadi

Ans: (b)
Explanation:

River	**Length**
Godavari	1465 Km
Krishna	1400 Km
Narmada	1312 Km
Mahanadi	851 Km
Cauvery	800 Km

Tapti	724 Km

Q99: Consider the following statements:
1. Karna Prayag is located at the confluence of the Pindar Ganga and Alaknanda rivers.
2. Vishnu Prayag is located at the confluence of the Dhauli Ganga and Bhagirathi rivers.
3. Devprayag is located at the confluence of the Bhagirathi and Alaknanda rivers.
4. Rudraprayag is located at the confluence of the Mandakini and Bhagirathi rivers.

How many of the statements given above is/are **incorrect**?
(a) Only one
(b) Only two
(c) Only three
(d) All four

Ans: (b)
Explanation:

- **Statement (1) is correct:** Karna Prayag is located at the confluence of the Pindar Ganga and Alaknanda rivers.
- **Statement (2) is incorrect:** Vishnu Prayag is located at the confluence of the Dhauli Ganga and Alaknanda rivers.
- **Statement (3) is correct:** Devprayag is located at the confluence of the Bhagirathi and Alaknanda rivers.
- **Statement (4) is incorrect:** Rudraprayag is located at the confluence of the Mandakini and Alaknanda rivers.

Q100: Kunchikal Falls in India is formed by which one of the following rivers?
(a) Kaveri
(b) Sharavati
(c) Pennar
(d) Varahi River

Ans: (d)
Explanation:

- Kunchikal Falls is a waterfall in India located in Shimoga district of Karnataka. Kunchikal Falls is formed by the River Varahi. Kunchikal falls cascade down rocky boulders and the total height of the fall is 455 meters. Varahi River originate and flows through Western Ghats in the Indian state of Karnataka. **So, option (d) is correct.**