Q.1) Arrange the following in chronological order as per the 'Geological Time Scale'.

1. Archean
2. Proterozoic
3. Mesozoic
4. Palaeozoic

Choose the correct answer:

a) 1 – 2 – 3 – 4
b) 2 – 3 – 4 – 1
c) 1 – 3 – 2 – 4
d) 1 – 2 – 4 – 3

Q.1) Solution (d)

Analysis:

Option (a) Archean	**Option (b)** Proterozoic	**Option (c)** Mesozoic	**Option (d)** Paleozoic
1	2	4	3
Earlier Precambrian Eon. 4000 million years ago.	Later Precambrian Eon. 2500 million years ago.	Later Phanerozoic Eon	Earlier Phanerozoic Eon

Archean is the oldest with subdivisions of eo, paleo, meso aerchean etc.

Proterozoic follows archean with subdivisions of plaeo, meso, neo proterozoic etc.

Paleozoic is the first era of the Phanerozoic Eon and that is followed by Mesozoic era.

Do you know?

- Geologists have divided Earth's history into a series of time intervals. The time intervals are variable in length. Geologic time is divided using significant events in the history of the Earth.

- **Geological Time Scale:** This is a system of chronological dating that relates **geological** strata (stratigraphy) to time. It is used by geologists, palaeontologists, and other Earth scientists to describe the timing and relationships of events that have occurred during Earth's history.

Additional Information:

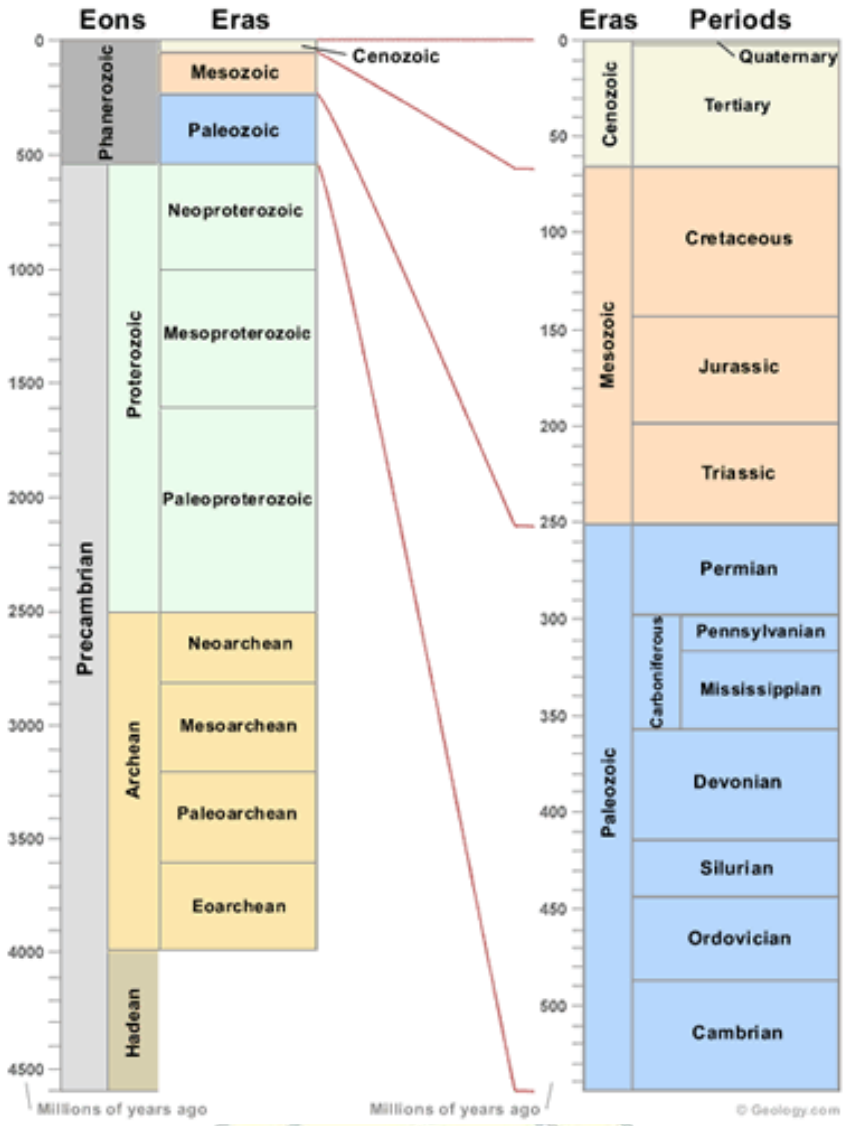
The Geological Time Scale is divided as follows-

Eons – are the largest intervals of geologic time and are hundreds of millions of years in duration. Precambrian Eon is the oldest and Phanerozoic Eon is the most recent eon and began more than 500 million years ago.

Eras – Eons are divided into smaller time intervals known as eras. In the time scale below you can see that the Phanerozoic Eon is divided into three eras: Cenozoic, Mesozoic and Paleozoic. Very significant events in Earth's history are used to determine the boundaries of the eras.

Periods – Eras are subdivided into periods. The events that bound the periods are widespread in their extent but are not as significant as those which bound the eras. In the time scale below you can see that the Paleozoic is subdivided into the Permian, Pennsylvanian, Mississippian, Devonian, Silurian, Ordovician and Cambrian periods.

Epochs - Finer subdivisions of time are possible, and the periods of the Cenozoic are frequently subdivided into epochs.



Q.2) Indian plate along the Himalayan Mountain ranges can be classified as what type of plate boundary?

a) Ocean – Continent Divergence
b) Continent – Continent Convergence
c) Divergent Boundary
d) Transform Boundary

Q.2) Solution (b)

Elimination:

Indian plate collides with Eurasian plate and the continuous movement anti-clockwise has lead to uplift of Himalayas. This is a Convergent boundary with continent-continent collision.

Analysis:

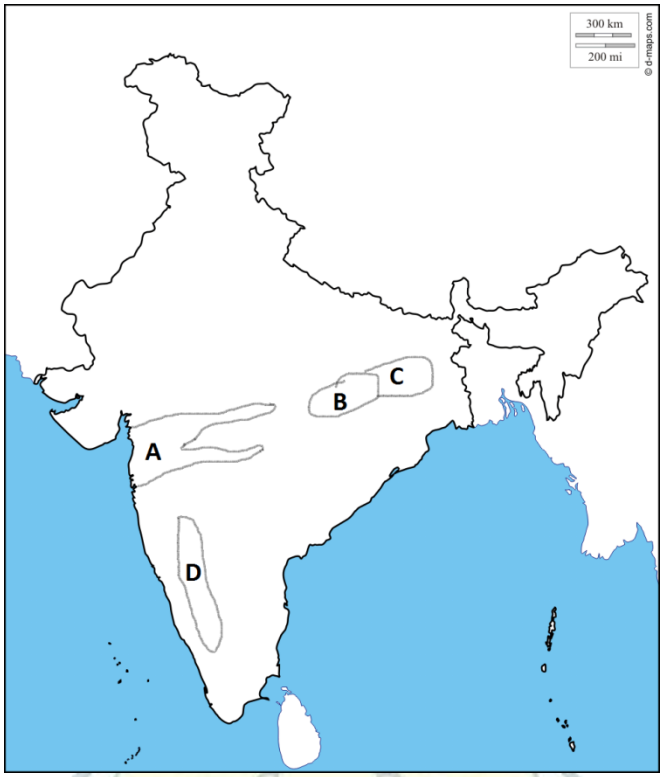
Option (a)	Option (b)	Option (c)	Option (d)
Incorrect	Correct	Incorrect	Incorrect
Ocean – Continent divergence	Continent – Continent Convergence	Divergent Boundary	Transform Boundary

Do you know?

It is convergent plate boundary which is also termed as destructive plate boundary because of no basinal development but instead is the collision where mountain building takes part.

- Himalayas ranges are the resulting Eurasian and Indian plate collisions.
- With destruction of the crust it is a convergence.

Q.3) Consider the map given below:



The place marked A, B, C and D in the given map are:

a) Rift valley region, Chhattisgarh plain, Rain shadow region and Chhota Nagpur
b) Rift valley region, Chhattisgarh plain, Chhota Nagpur plateau and Rain shadow region
c) Rain shadow region, Chhattisgarh plain, Chhota Nagpur plateau and Rift valley region
d) Rift valley region, Chhota Nagpur plateau, Chhattisgarh plain and Rain shadow region

Q.3) Solution (b)

Explanation:

Region A	Region B	Region C	Region D
Rift Valley region	Chhattisgarh plain	Chhota Nagpur plateau	Rain shadow region

Elimination:

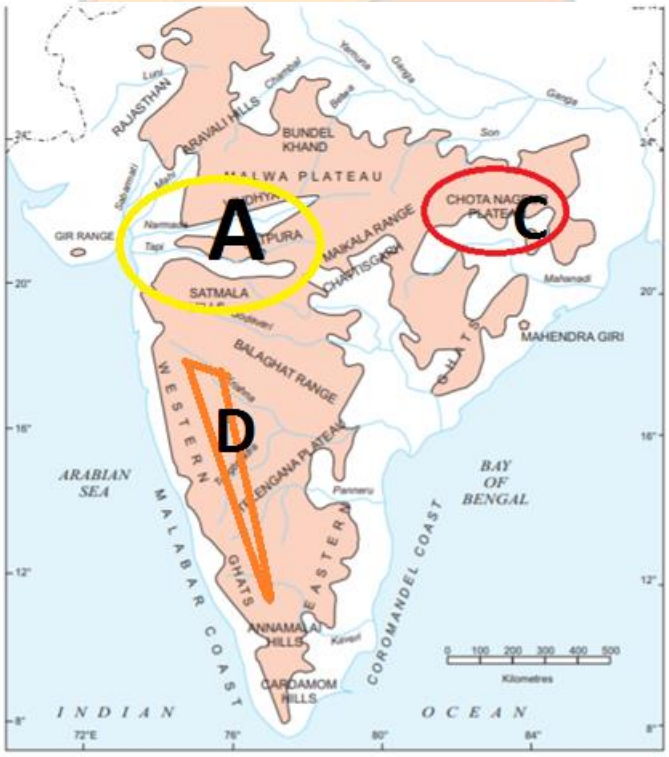
If you are aware of the rivers that flow thorough rift valley in India, which are – Narmada river, Tapti, Mahi (all flowing west), Damodar river in Chota Nagpur plateau, then it is easy to identify that region marked "A" in map is part of Rift Valley (Narmada and Tapti)

Rain Shadow Region is an area having relatively little precipitation due to the effect of a topographic barrier, especially a mountain range, that causes the prevailing winds to lose their moisture on the windward side, causing the leeward side to be dry. Eastern Side of Sahyadri ranges or Western Ghats on Deccan comprises of Rain Shadow Region.

The Chhota Nagpur Plateau is a plateau in eastern India, which covers much of Jharkhand state as well as adjacent parts of Odisha, West Bengal, Bihar and Chhattisgarh.

Chhattisgarh Plain forms the upper Mahanadi River basin. it is bounded by the Chota Nagpur plateau to the north, the Raigarh hills to the northeast, the Raipur Upland to the southeast, the Bastar plateau to the south, and the Maikala Range to the west.

Observe figure given below:



Q.4) With reference to Himalayas, consider the following statements:

1. Lesser Himalayas were formed during the Eocene period.
2. Shiwaliks are separated from the plain by Himalayan Front Fault (HFF).

Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.4) Solution (b)

Basic Information:

Trans Himalayas:

- The Himalayan ranges immediately north of the Great Himalayan range.
- Also called the Tibetan Himalaya because most of it lies in Tibet.
- The Zaskar, the Ladakh, the Kailas and the Karakoram are the main ranges.
- The Nanga Parbat (8126 m) is an important range which is in The Zaskar Range.

The Great Himalayas:

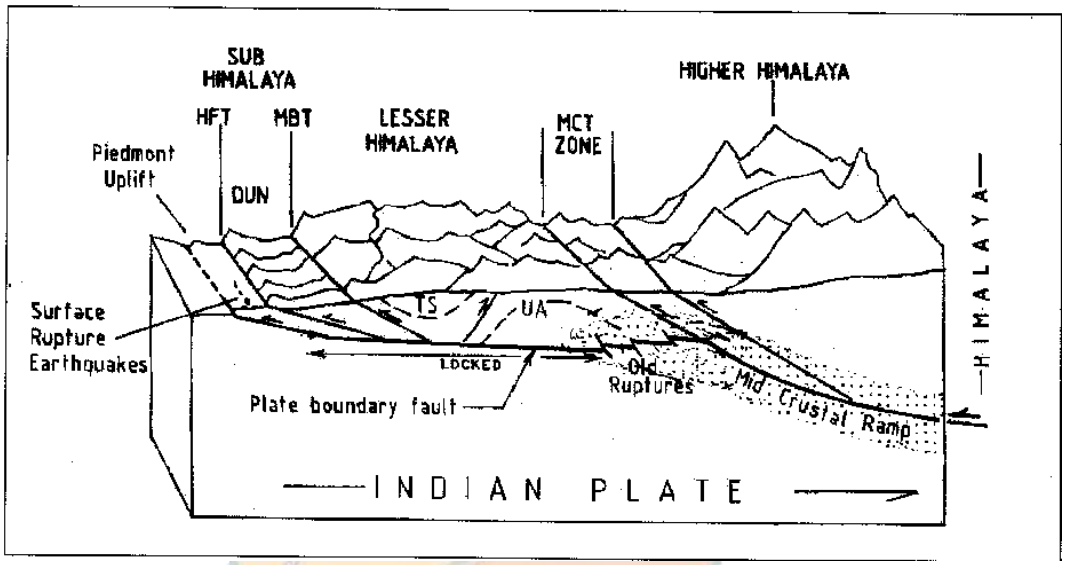
- Also known as Inner Himalaya, Central Himalaya or Himadri.
- Average elevation of 6,100 m above sea level and an average width of about 25 km.
- Terminates abruptly at the syntaxial bends. One in the Nanga Parbat in north-west and the other in the Namcha Barwa in the north-east.
- This mountain range boasts of the tallest peaks of the world, most of which remain under perpetual snow.

The Lesser Himalayas:

- In between the Shiwaliks in the south and the Greater Himalayas in the north.
- Runs almost parallel to both the ranges.
- It is also called the Himachal or Lower Himalaya.
- Lower Himalayas have steep, bare southern slopes (steep slopes prevent soil formation) and more gentle, forest covered northern slopes.

Shiwalik Range:

- Also known as Outer Himalayas.
- Located in between the Great Plains and Lesser Himalayas.
- The altitude varies from 600 to 1500 metres.
- Runs for a distance of 2,400 km from the Potwar Plateau to the Brahmaputra valley.



Statement Analysis:

Statement 1	Statement 2
Incorrect	**Correct**
Lesser Himalayas were formed during the second upheaval in Miocene period (45mya).	Shiwaliks are separated from the plain by Himalayan Front Fault (HFF).

Q.5) Arabian Sea records higher salinity than the Bay of Bengal because

a) Arabian Sea exhibits high rate of evaporation and low influx of freshwater.
b) Arabian Sea has shallow water.
c) Arabian Sea has more enclosed land.
d) Arabian Sea receives more rainfall.

Q.5) Solution (a)

Explanation:

- Salinity is measured as the ratio of weight of dissolved salts to total weight and is usually expressed as parts per thousand (ppt).
- 75% of seawater has a salinity ranging between 34-35 ppt. The average salinity in the oceans is 34.7 ppt i.e., on an average there is 34.7 g of salt in every kg of seawater.

- Salinity near the surface in the northern Bay of Bengal can be as low as 31 ppt because the bay receives lots of freshwater in the form of rain and from runoff of surrounding rivers (Ganga, Brahmaputra, Irrawaddy, Godavari, and others).
- Salinity near the surface in the Arabian Sea is much higher than in the Bay of Bengal because evaporation over the Arabian Sea is much greater and it receives relatively less river runoff.

Q.6) With reference to Peninsular Plateau, consider the following statements:

1. It is the largest physiographic unit of India.
2. The general slope is from west to east.

Which of the above statements are not correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.6) Solution (d)

Note: Incorrect statements are asked in the question.

Basic Information:

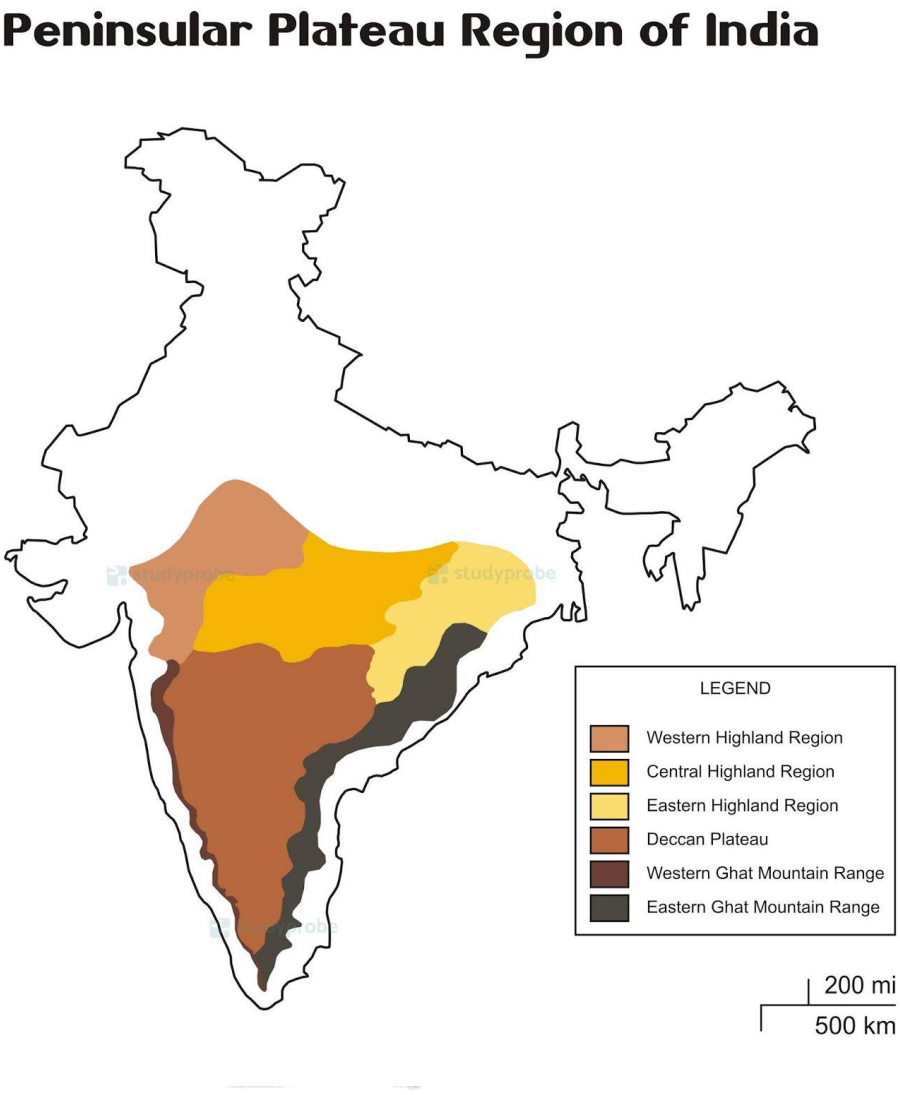
The Peninsular Plateau:

It covering an area of about 16 lakh sq. km forms the largest and oldest physiographic division of India. It is bounded by the Aravallis in the North-West, Maikal range in the North, Hazaribagh and Rajmahal Hills in the North-East, the Western Ghats in the West and the Eastern Ghats in the East.

The peninsular plateau is divided into:

- Central High lands which include Aravalli Range, Malwa Plateau, Vidhya Range, Bundelkhand Plateau, Baghelkhand Plateau.
- Eastern Plateau-Chhota Nagpur plateau and Meghalaya Plateau
- The Deccan Plateau which include Mahadev Hills, Kaimur Hills, Maikal Range, Western Ghats, Nilgiri, Anaimalai Hills, Palani Hills and Cardamom Hills, Eastern Ghats (Shevaroy Hills, Javadi Hills, Palkonda Range Nallamala Hills) Mahendragiri. Maharashtra Plateau,

Mahanadi Basin, Garhjat Hills, Karnataka Plateau, Telangana Plateau and Tamil Nadu Upland.



Statement Analysis:

Statement 1	Statement 2
Correct	**Correct**
It covering an area of about 16 lakh sq. km	The slope of Peninsular Plateau is from

forms the **largest** and **oldest physiographic division of India**.	West to East and most of the rivers follow the same direction except Narmada and Tapi which flows from East to West.

Q.7) Consider the following statements:

1. Eastern and Western Coastal plains meet each other at Kanyakumari.
2. Mullayanagiri is the highest of Karnataka plateau.
3. Malabar Coast is an emerging coast.

Which of the above statements is/are correct?

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

Q.7) Solution (d)

Statement Analysis:

Statement 1	Statement 2	Statement 3
Correct	**Correct**	**Correct**
Fact based: Eastern and Western Coastal plains meet each other at Kanyakumari.	Mullayanagiri is the highest peak in Karnataka. Mullayyanagiri is located in the Chandra Dhrona Hill Ranges of the Western Ghats of Chikkamagaluru Taluk. With a height of 1,930 metres it is the highest peak in Karnataka.	Malabar coast is the southern part of West Coast which covers Kerala and part of Karnataka. It is an **emergent coast** and beaches are found in this region.

Q.8) Consider the following statements:

1. Sutlej and Subansiri are antecedent rivers.
2. River Barak, a tributary of Brahmaputra is the second largest river of northeast.

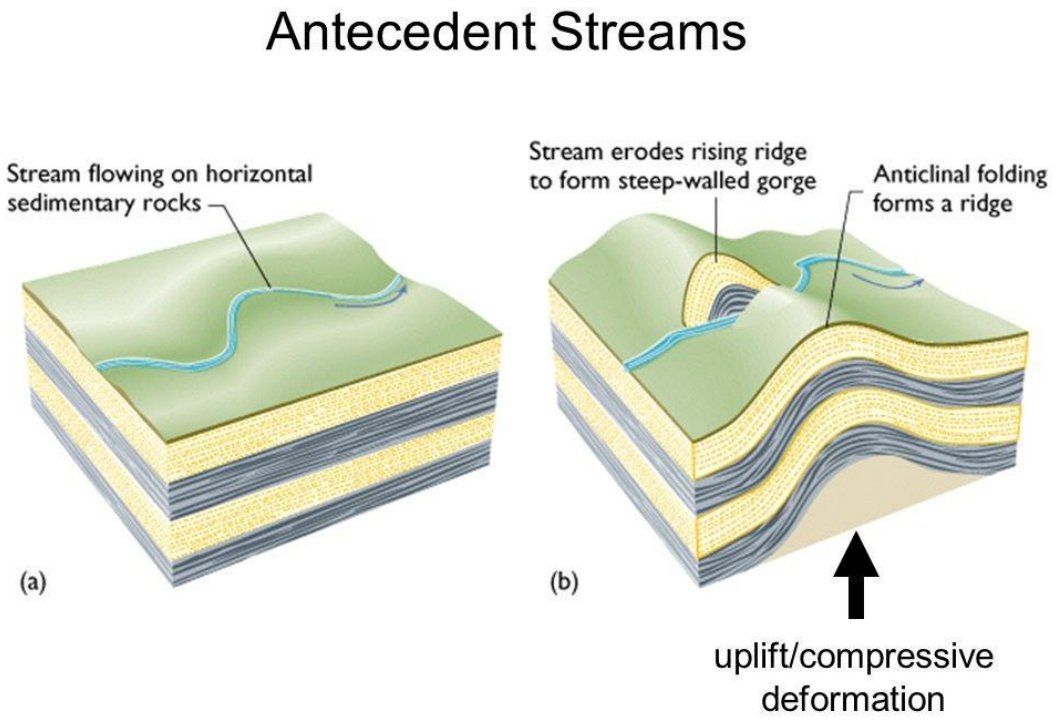
Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.8) Solution (a)

Basic Information:

An **antecedent stream** is a stream that maintains its original course and pattern despite the changes in underlying rock topography. Many **Himalayan rivers** are good examples of antecedent origin. These rivers originated well before the Himalayan region was uplifted. The rivers Indus, Brahmaputra, Sutlej, Kosi and Subansiri originated on the Tibetan side and now traverse the existing mountain ranges, cutting deep gorges.



Statement Analysis:

Statement 1	Statement 2
Correct	**Incorrect**
Many **Himalayan rivers** are good examples of antecedent origin. The rivers Indus, Brahmaputra, Sutlej, Kosi and Subansiri are examples of antecedent rivers.	River Barak is **not a tributary of Brahmaputra** but it is the second largest river of northeast. The Barak sub-basin drains areas in India, Bangladesh and Mayanmar. The Katakhal, Jiri, Chiri, Modhura, Longai, Sonai, Rukni and Singla are the main tributaries of the valley.

Q.9) What does the term 'Duar' refer to?

a) Coarse pebble belt along the foothills of the Shivaliks.
b) Rolling plains with low granitic hills in southern India.
c) Alluvial floodplains south of outer foothills of Himalayas and north of Brahmaputra basin.
d) Longitudinal region where mountains run parallel to the coast.

Q.9) Solution (c)

Explanation:

Duar:

- Alluvial floodplains south of outer foothills of Himalayas and north of Brahmaputra basin.
- The Daurs are floodplains in the region around the Himalayas, in the state of Assam in the north-east and in the north of West Bengal.
- The altitude of duar typically varies from one area to the other but usually, the minimum is 90 m and the maximum is 1750 m.

- The daurs are floodplains, so the mechanism by which it is produced consists of the materials that are deposited on the edges of the rivers during a flood.
- It is also known as silt, when the rivers overflow, these floods occur and leave certain particles behind that are classified as daurs.

Coarse pebble belt along the foothills of the Shivaliks: Bhabar

Rolling plains with low granitic hills in southern India: Maidan

Longitudinal region where mountains run parallel to the coast: Dalmatian coast

Q.10) With reference to Indian soil, consider the following statements:

1. The sand content of alluvial soil decreases from west to east.
2. Peninsular soils are formed due to *in situ* decomposition of rocks.

Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.10) Solution (c)

Basic Information:

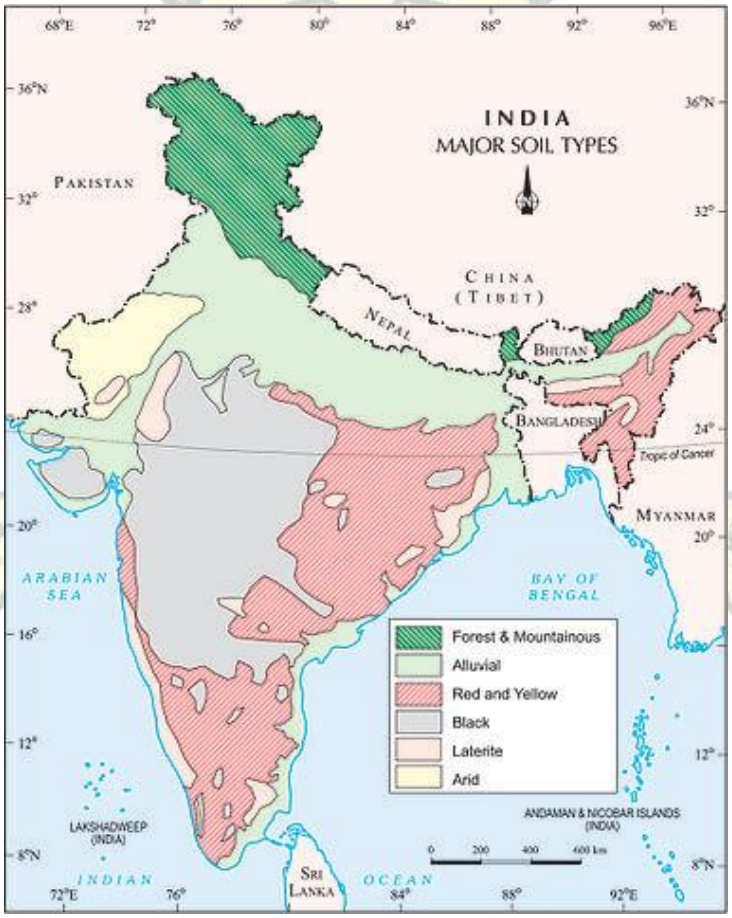
Major classification of Indian soils:

- Alluvial soil (43%)
- Red soil (18.5%)
- Black / regur soil (15%)
- Arid / desert soil
- Laterite soil
- Saline soil
- Peaty / marshy soil
- Forest soil

- Sub-mountain soil
- Snowfields

Alluvial soil:

- The alluvial soil occurs mainly in the Satluj- Ganga- Brahmaputra Plains.
- They are also found in the valleys of the Narmada, Tapi, and the Eastern and Western coastal plains.
- These soils are mainly derived from the debris brown from the Himalayas
- This soil has a phosphorous deficiency.
- The colour of soil varies from light grey to ash.
- This soil is suited for Rice, maize, wheat, sugarcane, oilseeds, etc.
- This soil is divided into
    - Khadar Soil (New)
    - Bhangar Soil (Old)



Statement Analysis:

Statement 1	Statement 2
Correct	**Correct**
The sand content of alluvial soil decreases from west to east.	Peninsular soils are formed due to *in situ* decomposition of rocks whereas the extra-peninsular soils are depositional work of rivers and winds.

Q.11) With reference to Naku La, consider the following statements:

1. It is located to the north of Kangchendzonga peak.
2. The Teesta River passes through the pass.

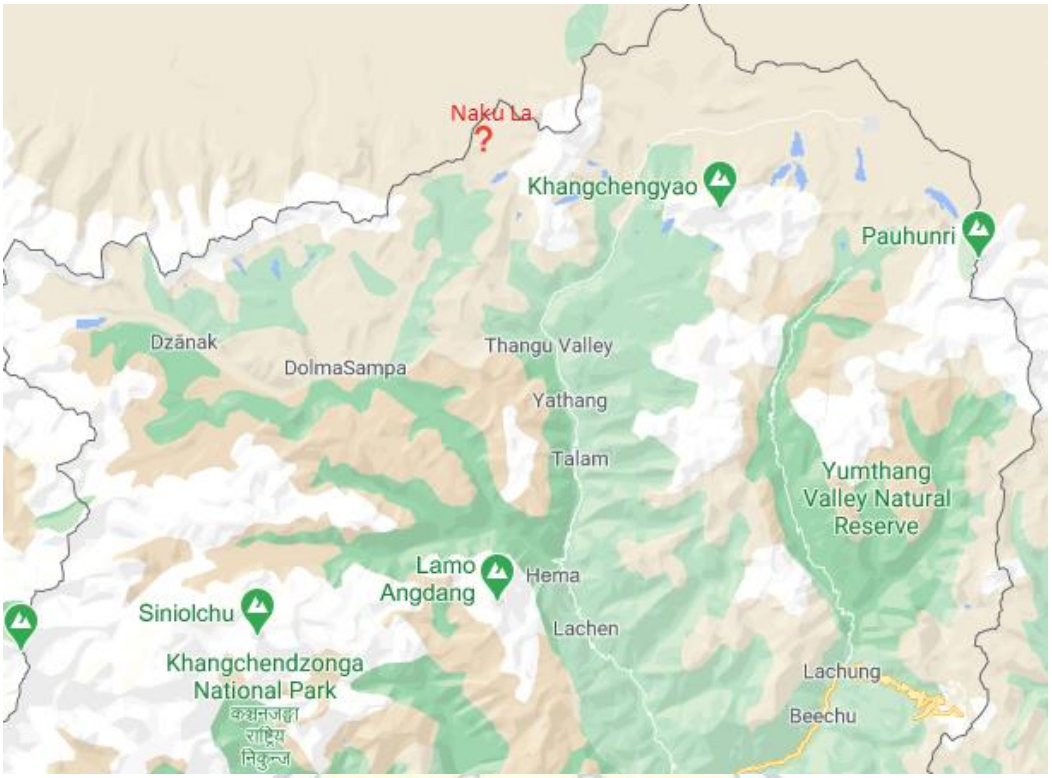
Which of the above statements is/are correct?

a) 1 only
b) 2 only
c) Both 1 and 2
d) Neither 1 and 2

Q.11) Solution (a)

Basic Information:

- Naku La sector is a pass at a height of more than 5,000 metres above Mean Sea Level (MSL) in the state of Sikkim.
- It is located ahead of Muguthang or Cho Lhamu (source of River Teesta).
- At Muguthang, the road on the Chinese side is motorable, and on the Indian side, it is a remote area.
- The other passes located in the state of Sikkim are Nathu La Pass and Jelep La Pass.



Statement Analysis:

Statement 1	Statement 2

Correct	Incorrect
Naku La is to the north of Kangchendzonga.	Naku La lies ahead of Teesta's source.

Q.12) Consider the following statements with reference to Snowline:

1. It is the level below which snow will lie all year.
2. In eastern Himalayas the snowline is lower.
3. Snowline depends on precipitation, latitude and local topography.

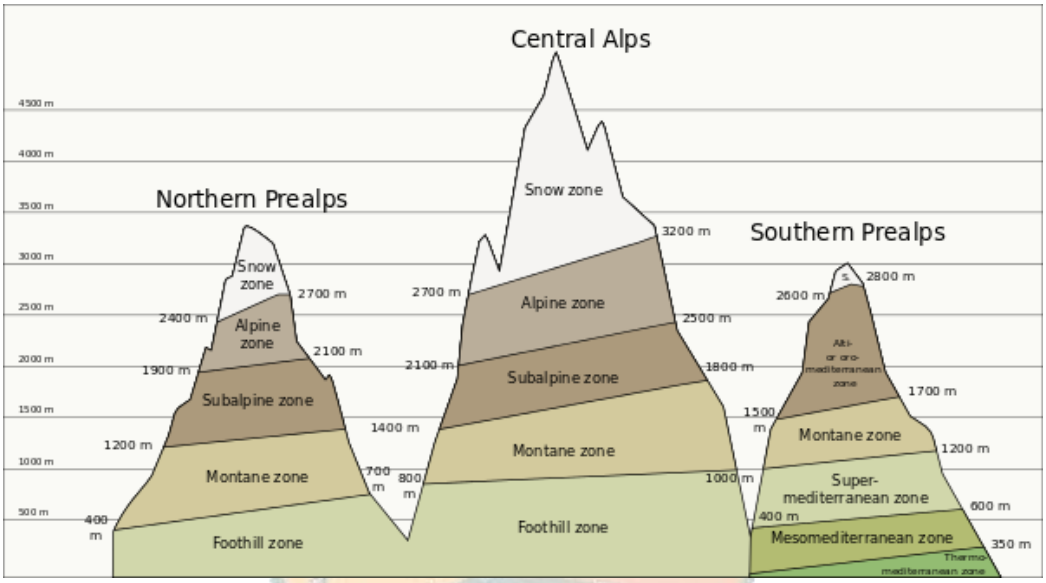
Which of the above statements is/are correct?

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

Q.12) Solution (b)

Basic Information:

- The lower limit of perpetual snow is called the 'snowline'.
- The climatic snow line is the boundary between a snow-covered and snow-free surface.
- The actual snow line may adjust seasonally, and be either significantly higher in elevation, or lower.



Statement Analysis:

Statement 1	Statement 2	Statement 3
Incorrect	**Incorrect**	**Correct**
It is the level **above** which snow will lie all year. It is the boundary between a snow-covered and snow-free surface.	In **Eastern Himalayas** and Kumaon Himalayas the snowline is around **3,500 m** above sea level whereas in **western Himalayas** snowline is about **2,500 m** above sea level. This difference in snowline is partly due to the **increase in latitude** from 28° N in Kanchenjunga to 36° N in the Karakoram. But the major factor is **precipitation**. Precipitation in western Himalayas is comparatively low and occurs mostly as snowfall where as in eastern Himalayas the precipitation is greater and occurs mostly in the form of rain.	Himalayas has different heights in different parts, depending on latitude, altitude, amount of precipitation, moisture, slope and local topography.

Q.13) Consider the following statements regarding peninsular rivers:

1. They are generally not fit for navigation.
2. All the peninsular rivers are nonperennial in nature.
3. All the peninsular rivers are fed by rain only.
4. Both deltas and estuaries are formed by them.

Which of the statements given above are correct?

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

Q.13) Solution (c)

Basic Information:

Peninsular rivers:

- These rivers originate in the Peninsular Plateau and are named as Peninsular Rivers.
- The Peninsular drainage system is older than the Himalayan one. This is evident from the broad, largely-graded shallow valleys, and the maturity of the rivers.

The peninsular river system can be categorised into the following sections:

- **The East flowing rivers**: Mahanadi, Godavari, Krishna and Cauvery flow eastwards and drain into the Bay of Bengal. These rivers make **deltas** at their mouths.
- **The West flowing rivers:** Narmada and Tapi along with other small rivers originating from the Western Ghats and falling in the Arabian Sea form **estuaries in place of deltas**. This is due to the fact that these rivers, especially Narmada and Tapi, flow through hard rocks and are not able to form distributaries before they enter the sea.

Statement Analysis:

Statement 1	Statement 2	Statement 3	Statement 4
Correct	**Incorrect**	**Correct**	**Correct**
They are generally not fit for navigation because these are **not perennial** in nature and the **presence of sharp bends and waterfalls** hinder navigational activities.	A few Peninsular rivers are also perennial. The main reason for this is the **continuous rainfall**, first by South-West monsoon, and second by North-East monsoon in some regions of South India especially in Tamil Nadu. Examples of some **perennial peninsular** rivers are Cauvery (due to winter rainfall in the lower course), Periyar, etc. Further, some rivers such as Godavari, Narmada, etc. have a large number of tributaries making them perennial.	All the Peninsular rivers are fed by rain only.	**The East flowing rivers** make **deltas** at their mouths. The **West flowing rivers** form **estuaries** in place of deltas.

Q.14) Consider the following statements about the Vindhyas and the Satpuras:

1. Satpuras is the source of rivers Narmada and Tapti.
2. Kalumar Peak is the highest point of the Vindhyas.
3. The Satpuras meet the Vindhyas in the Maikal Hills.

Which of the following statement(s) is/are *incorrect*?

a) 1 and 2 only
b) 2 and 3 only
c) 1 only
d) None of these

Q.14) Solution (d)

Basic Information:

- The Satpura and Vindhaya Range lies in central India and both these ranges run parallel to each other.
- Out of these two, Satpura range is longer and is the source of rivers like Narmada and Tapti.
- Both Satpura and Vindhaya are mainly situated in Madhya Pradesh and Maharashtra with some extension to Gujarat, Chattisgarh and Uttar Pradesh.
- Kalumar Peak (752m) and Duphgarh Peak (1350m) are the highest point in Vindhaya and Satpura range.
- These ranges are famous for a large no of tourist spot like Panchmarhi Hill Station, Kanha National Park, Amarkantak and Omkareshwar temple.
- A southern chain of Vindhyas runs between the upper reaches of the Son and Narmada rivers to meet the Satpura Range in the Maikal Hills near Amarkantak.

Statement Analysis:

Note: *Incorrect statements are asked.*

Statement 1	**Statement 2**	**Statement 3**
Correct	**Correct**	**Correct**
Narmada originates from Amarkantak and Tapti originates from Multai, both lie in the Satpuras.	Kalumar Peak (752m) and Duphgarh Peak (1350m) are the highest point in Vindhaya and Satpura range.	A southern chain of Vindhyas runs between the upper reaches of the Son and Narmada rivers to meet the Satpura Range in the Maikal Hills near Amarkantak.

Q.15) Which of the statements given below is/are not true in regard to western coastal plain?

a) It is a narrow belt.
b) Eastern coastal plain receives comparatively low rainfall but the Western coastal plain receives heavy rainfall.
c) West Coast Plain is infertile and agriculturally not prosperous except in the Malabar Coast.
d) It is an example of emergent coastal plain.

Q.15) Solution (d)

Explanation:

Western Coastal Plains	Eastern Coastal Plains
It lies between the lies in between the Western Ghats and the Arabian Sea	It lies between the Eastern Ghats and the Bay of Bengal.
It is divided into three stretches- Konkan(Mumbai-Goa),Kannad(central stretch) and Malabar(southern stretch).	It is divided into two stretches- Northern Circar(northern part) and Coromandel Coast(southern part)
The short rivers do not make any deltas on the West Coast.	The large rivers make wide deltas on the Eastern Coastal Plains.
The West Coast Plain is formed by coarse grained soil. It is infertile and agriculturally not prosperous except in the Malabar Coast.	The East Coast Plain is formed by fine alluvial soil and is fertile especially in the deltaic regions.
The Western Coastal Plain is narrow with a width of 50 to 65 km. In some places it is so narrow that the Western Ghats touch the Sea water.	Eastern Coastal Plain is broader than the West Coast plain. The width varies from 80 to 100 km.
The Western Coast is relatively rocky with sand and sand dunes. It slopes abruptly down to the sea. There is no lagoon on the northern part. It has many estuaries on the Konkon Coast. But the southern part especially the Malabar Coast has the beautiful scene of back-water country with a series of lagoons.	The Eastern Coast is sandy with alluvium and slopes gently towards the sea. Sand dunes and marshy lands are also found. In some Coastal strips lagoons (Chilka, Pulicat) are formed.

Western Coastal plain receives heavy rainfall.	This Coastal plain receives comparatively low rainfall.
It is fault coast and shows marks of subsidence except in Malabar coast in south where evidence of emergence is found. In other words, Western coastal plain is an example of submerged coastal plain (not emergent). It provides natural conditions for development of ports.	This coast is emergent type which is characterised by offshore bars, sea beaches and lagoons.
It is narrow plain drained by many swift but small rivers.	It is aggradational plain (It is the term used in geology for the increase in land elevation, typically in a river system, due to the deposition of sediment) formed by the rivers sediments.
	Get maximum cyclonic storms and fit for predominantly rice and jute cultivation.

Q.16) Which among the following is called 'Ruhr of India'?

a) Chotanagpur plateau
b) Malwa plateau
c) Bundelkhand plateau
d) Deccan plateau

Q.16) Solution (a)

Explanation:

Chotanagpur Plateau is spread over in the states of Chhattisgarh, Jharkhand, West Bengal and Odisha.

The region is composed of granite, gneiss and dharwar rocks, which are rich in mineral wealth. Chotanagpur plateau is prosperous in minerals as well as industries. Therefore, it is called 'Mineral bowl of India' and 'Ruhr of India'.

This region has become a hub of heavy industries such as iron and steel, tin planting, railway coaches and locomotives, etc. Hence it has earned the name of 'Ruhr valley of India'. The other important industries of this region are agriculture equipment, paper, electrical wires, chemical industry, cement, glass and ceramic.

Q.17) Consider the following statements about Lakshadweep Islands:

1. Lakshadweep is India's smallest union territory.
2. The Amindivi is the northernmost group of islands, and Minicoy Island is the southernmost island.
3. Their topography is flat and relief features such as hills, streams, valleys, etc. are absent.

Select the correct statements:

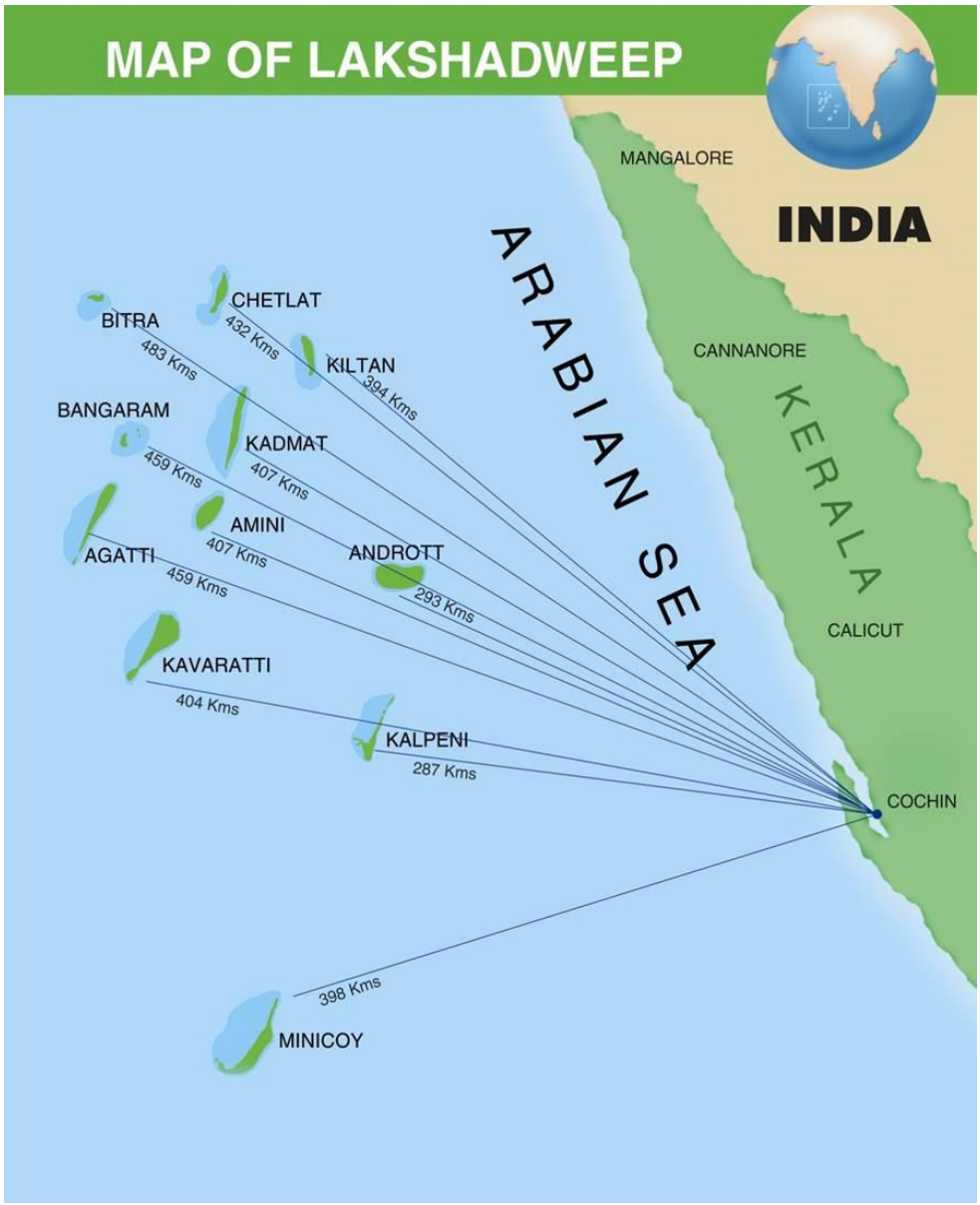
a) 1 only
b) 2 only
c) 3 only
d) All of the above

Q.17) Solution (d)

Basic Information:

- Lakshadweep, formerly Laccadive, Minicoy, and Amindivi Islands, is the smallest union territory of India.
- It is a group of some three dozen islands scattered over some 30,000 square miles (78,000 square km) of the Arabian Sea off the south-western coast of India. Extending between 8°N and 12°N latitude.
- The principal islands in the territory are Minicoy and those in the Amindivi group. The easternmost island lies about 185 miles (300 km) from the coast of the state of Kerala.
- Ten of the islands are inhabited.
- The administrative centre is Kavaratti.
- The name Lakshadweep means "Hundred Thousand Islands" in the Malayalam language and also in Sanskrit. Area 12 square miles (32 square km).
- The islands of Lakshadweep are small, none exceeding 1 mile (1.6 km) in breadth;
- The higher eastern sides of the islands are the most suited for human habitation, while the low-lying lagoons on the western sides protect the inhabitants from the southwest monsoon. The soils of Lakshadweep are generally sandy, derived from the coral.

- Throughout the year, temperatures in Lakshadweep generally range from about 70 °F (about 20 °C) to nearly 90 °F (about 32 °C). Cyclones moving across the Arabia Sea rarely strike the islands. However, the winds and waves associated with them can alter the land features considerably.



Statement Analysis:

Statement 1	Statement 2	Statement 3

Correct	Correct	Correct
It's a fact. Lakshadweep, formerly Laccadive, Minicoy, and Amindivi Islands, is the smallest union territory of India.	Amindivi is a group of islands, while Minicoy is a single island. The dividing line is the 9 degree channel.	These are coral islands, flat and featureless.

Q. 18) With reference to the Thar Desert, consider the following statements:

1. One of the reasons of formation of the Thar Desert is change in drainage pattern of the area.
2. The subtropical high pressure belt and limited monsoon contributes to the dryness of the Thar Desert.

Which of the following statement(s) is/are correct?

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

Q.18) Solution (c)

Basic Information:

- The Thar Desert, also known as the Great Indian Desert, encompasses 77,000 square miles of rolling sand dunes in eastern Pakistan and the north-western Indian state of Rajasthan.
- Small portions of the desert also extend into the Indian states of Haryana, Punjab, and Gujarat, but these states do not exercise extensive control over the region.
- The Thar Desert's name derives from the word **t'hul**, the general term for the region's sand ridges. It is defined by a series of natural borders, including the Aravalli Mountain Range to the southeast and the Punjab plain in the north and northeast. To the west, lies the Indus plain, and to the south, the Rann of Kutch.

- The geographic isolation of the Thar Desert by mountain ranges and plains contributes significantly to the weather patterns that shape its distinctive, hot, dry environment. The environment around the Thar effectively absorbs all the rain that is carried in the monsoon clouds before the clouds can reach the desert. The resulting monsoon winds in the desert are hot and dry, and the desert does not share in the wet season experienced in surrounding terrains.
- The origin of the Thar Desert is a controversial subject. Some experts consider it to be 4,000 to 10,000 years old, while others maintain that aridity started in this region much earlier.
- It has been observed through remote sensing techniques that Late Quaternary climatic changes and neotectonics have played a significant role in modifying the drainage courses, and a large number of palaeochannels exist.
- Most of the studies share the opinion that the palaeochannels of the Sarasvati coincide with the bed of present day Ghaggar and believe that the Sutlej along with the Yamuna once flowed into the present Ghaggar riverbed. It has been postulated that the Sutlej was the main tributary of the Ghaggar and that subsequently the tectonic movements might have forced the Sutlej westward and the Yamuna eastward, causing the Ghaggar to dry up.

Statement Analysis:

Statement 1	Statement 2
Correct	**Correct**
The modification of drainage patterns due tectonic activity caused the rivers to dry up. This factor aided in the formation of the Thar Desert.	The Thar Desert lies in the subtropical high pressure belt like many other subtropical deserts. This belt has subdued rainfall. The monsoon winds reaching the Thar are

	already exhausted and a lot of it runs parallel to the Aravalis without affecting the region.

Q.19) Consider the following statements about the Western and Eastern Himalayas of India:

1. The Western Himalayas are higher with sudden steep slope whereas Eastern Himalayas are lower with gradual slope.
2. The Western Himalayas are located on higher latitude whereas the Eastern Himalayas are located on lower latitude.

Which of the above statement(s) is/are correct?

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

Q.19) Solution (b)

Sl. No.	Western Himalayas	Eastern Himalayas
1.	Lower and gradual slope. Hence, the higher peaks in this part are farther from the plains and a number of ranges lie between the plains and high peak.	Higher and steep-sudden slope. That is why two of the highest peaks of Himalayas, Mt. Everest (in Nepal) and Kanchenjunga are not very far from the plains.
2.	Located on higher latitude, therefore colder. As a result, the snowline in the Western Himalayas is at a lower altitude than in the Eastern Himalayas.	Located on lower latitude, therefore warmer. Therefore, snowline is at a higher altitude.
3.	From Indus to Kali river	From Kali river to Brahmaputra river
4.	Peaks: Nanga Parbat, Nanda Devi, Badrinath	Peaks: Everest, Makalu, Annapurna, Dhaulagiri.

Q.20) In which of the following areas, 'ravines' are present in India?

1. Along the banks of Narmada
2. Along the foothills of Shivalik
3. Chambal

4. Chota Nagpur region

Select the correct code:

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

Q.20) Solution (d)

Explanation:

A ravine is generally a fluvial slope landform of relatively steep (cross-sectional) sides, on the order of twenty to seventy percent in gradient.

Ravines may or may not have active streams flowing along the downslope channel which originally formed them; moreover, often they are characterized by intermittent streams, since their geographic scale may not be sufficiently large to support a perennial watercourse. A ravine is a deep valley which is formed due to linear/dendritic fluvial erosion of loose unconsolidated and bare soils byes.

In all the given areas - along the banks of Narmada and foothills of Shivalik, Chambal and Chota Nagpur region – Ravines are found.

Q.21) With reference to World Trade Organization's Agreement on Rules of Origin which of the following statements is/are correct?

1. Under the agreement, WTO members agreed to negotiate harmonized preferential rules of origin.
2. The agreement established a Technical Committee on Rules of Origin under the auspices of the World Customs Organization.
3. The agreement provides general principles for prescribing rules of origins.

Select the correct answer using the code given below:

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

d) 1, 2 and 3

Q.21) Solution (b)

Statement 1	Statement 2	Statement 3
Incorrect	**Correct**	**Correct**
World Trade Organization's Agreement on Rules of Origin aims at long-term harmonization of non preferential rules of origin and to ensure that such rules do not themselves create unnecessary obstacles to trade. Non-preferential rules of origin are those which apply in the absence of any trade preference - that is, when trade is conducted on a most-favoured nation basis. Preferential rules or origin apply in reciprocal trade preferences or in non-reciprocal trade preferences. **In the Agreement on Rules of Origin, WTO members agreed to negotiate harmonized non-preferential rules of origin.**	It sets out a work programme for the harmonization of rules of origin, negotiations for which are still ongoing. The Agreement establishes a Committee on Rules of Origin within the framework of the WTO, open to all WTO Members. **A Technical Committee on Rules of Origin is created under the auspices of the World Customs Organization.**	**The agreement also provides general principles for prescribing rules of origins**, such as transparency, positive standards, administrative assessments, judicial review etc., which shall also apply to preferential rules of origin.

Q.22) The 'SAROD-Ports' launched by Ministry of Shipping is related to which of the following?

a) Special Purpose Vehicle of Sagarmala Project
b) Investment Promotion and Facilitation Agency
c) Single Window Clearance System Portal
d) Affordable Dispute Redressal Mechanism

Q.22) Solution (d)

- Union Ministry of Shipping launched '**SAROD-Ports' (Society for Affordable Redressal of Disputes - Ports)** will help in settlement of disputes through arbitrations in maritime sector, including ports and shipping sector in Major Port Trusts, Non-major Ports, including private ports, jetties, terminals and harbours.
- It is established under Societies Registration Act, 1860 with following objectives: Affordable and timely resolution of disputes in fair manner. Enrichment of Dispute Resolution Mechanism with panel of technical experts as arbitrators.
- It will also cover disputes between granting authority and Licensee/ Concessionaire/ Contractor and also disputes between Licensee/Concessionaire and their contractors

Q.23) The United Nations Convention on International Settlement Agreements Resulting from Mediation is known as which of the following?

a) Hong Kong Convention
b) New York Convention
c) Singapore Convention
d) Vienna Convention

Q.23) Solution (c)

- The **United Nations Convention on International Settlement Agreements Resulting from Mediation** also known as the **Singapore Convention** on Mediation is the first UN treaty to be named after Singapore.
- Convention applies to international settlement agreements resulting from mediation, concluded by parties to resolve a commercial dispute.
- It will allow businesses to seek enforcement of a mediated settlement agreement across borders by applying directly to courts of countries that have signed and ratified the treaty.
- Currently, Convention has 53 signatories, including India, China, and US.

Q.24) Consider the following statements:

1. Medicanes are tropical-like cyclones formed over the Mediterranean Sea.
2. The cores of Medicanes are colder in comparison to that of tropical cyclones.

Which of the statements given above is/are correct?

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

Q.24) Solution (c)

Statement 1	Statement 2
Correct	**Correct**
Medicanes (MEDIterranean hurriCANES) refer to tropical storm like cyclone observed across the Mediterranean Sea. Recently a medicane named Ianos made landfall along the coast of Greece. With the surrounding dry climate and the relatively shallow waters of the sea, the occurrence of tropical-like cyclones is infrequent. They typically form in the fall or winter months and occur once or twice a year.	Medicanes occur more in colder waters than tropical cyclones, hurricanes and typhoons. Hence, the **cores of these storms are colder in comparison to the warm cores of tropical cyclones**. These are typically smaller in diameter and have lower wind speeds than true tropical cyclones.

Q.25) The Leuser Ecosystem recently seen in news is located in which of the following island?

a) Sumatra
b) Borneo
c) Sulawesi
d) New Guinea

Q.25) Solution (a)

- **Leuser Ecosystem** is a forest area on the island of **Sumatra, Indonesia.**
- It is among the most ancient and life-rich ecosystem ever documented by science.
- It is a world-class hotspot of biodiversity and a UNESCO World Heritage Site.
- It is widely acknowledged to be among the most important areas of intact rainforest left in all of Southeast Asia.
- The ecosystem stretches across the province of Aceh and North Sumatra, Indonesia.

- An investigation by the global watchdog Rainforest Action Network (RAN) has shown that various food, cosmetics and finance companies have links with companies which are responsible for the destruction of the Leuser Ecosystem.

Q.26) Arrange the following States in descending order as per their ranking in 4th edition of Ease of Doing Business Rankings based on the State Business Reform Action Plan.

1. Uttar Pradesh
2. Andhra Pradesh
3. Madhya Pradesh
4. Telangana

Select the correct answer using the code given below:

a) 2 – 3 – 4 – 1
b) 2 – 1 – 4 – 3
c) 4 – 3 – 2 – 1
d) 4 – 1 – 2 – 3

Q.26) Solution (b)

- The Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry released the 4th edition of Ease of Doing Business Rankings based on the State Business Reform Action Plan (State BRAP).
- Top Performers: **(1) Andhra Pradesh; (2) Uttar Pradesh; (3) Telangana; (4) Madhya Pradesh**; (5) Jharkhand.
- Worst performers: (1) Tripura; (2) Sikkim; (3) Odisha
- BRAP aims to achieve the larger objective of attracting investments and increasing Ease of Doing Business (EoDB) in each State by introducing an element of healthy competition through a system of ranking.

Q.27) The Five Star Villages scheme is launched under which of the following Ministry?

a) Ministry of Communications
b) Ministry of Rural Development
c) Ministry of Environment, Forest and Climate Change

d) Ministry of New and Renewable Energy

Q.27) Solution (a)

- **Five Star Villages scheme has been launched recently by the Department of Posts, Ministry of Communications**.
- It seeks to bridge the gaps in public awareness and reach of postal products and services, especially in interior villages.
- It aims to ensure universal coverage of flagship postal schemes in rural areas of the country. Schemes covered under this include: Savings Bank accounts, Sukanya Samridhi Accounts/ PPF Accounts, Postal Life Insurance Policy/ Rural Postal Life Insurance Policy etc.
- One Scheme is equal to one star of rating. Therefore, if a village attains universal coverage for four schemes from the above list, then that village gets four-star status and so on.

Q.28) Consider the following statements regarding Climate Smart Cities Assessment Framework (CSCAF 2.0):

1. It is launched by Ministry of Environment, Forest and Climate Change.
2. Climate Centre for Cities supports in implementation of CSCAF.

Which of the statements given above is/are correct?

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

Q.28) Solution (b)

Statement 1	Statement 2
Incorrect	**Correct**
Climate Smart Cities Assessment Framework (CSCAF 2.0) is a first-of-its-kind assessment framework on climate relevant parameters	Its objective is to provide a clear roadmap for cities towards combating Climate Change while planning and implementing

launched in 2019 **by Ministry of State for Housing and Urban Affairs (MoHUA)**. The framework has 28 indicators across five categories namely; (i) Energy and Green Buildings, (ii) Urban Planning, Green Cover & Biodiversity, (iii) Mobility and Air Quality, (iv) Water Management and (v) Waste Management.	their actions, including investments; (2) To inculcate a climate sensitive approach to urban planning and development in India. **Climate Centre for Cities under National Institute of Urban Affairs is supporting MoHUA in implementation of CSCAF.**

Q.29) Vyttila-11 variety of pokkali seedlings is native to which of the following region?

a) Konkan
b) Malabar
c) Coromandel
d) Sundarbans

Q.29) Solution (b)

- **Pokkali** is a unique variety of rice known for its saltwater resistance and is cultivated in the districts of Alappuzha, Thrissur and Ernakulam districts of **Kerala**.
- The Pokkali has received a GI tag.
- Vyttila-11 is the latest variety of pokkali developed by the Kerala Agricultural University.
- Farmers in West Bengal are experimenting with the pokkali variety of rice to tide over a crisis-like situation created by severe seawater incursion into paddy fields in the Sundarbans.

Q.30) The scheme of setting up of Plastic Parks with a state-of-the-art infrastructure through cluster development approach is an initiative of which of the following Ministries?

a) Ministry of Commerce and Industry
b) Ministry of Heavy Industries and Public Enterprises
c) Ministry of Chemicals & Fertilizers
d) Ministry of Environment, Forest and Climate Change

Q.30) Solution (c)

- The **Ministry of Chemicals & Fertilizers has approved setting up of 10 Plastic Parks** in the country.
- The Plastic Parks are being set up in the states of Assam, Madhya Pradesh, Odisha, Tamil Nadu, Jharkhand, Uttarakhand and Chhattisgarh.
- A Plastic Park is an industrial zone devoted to plastic enterprises and its allied industries.
- Implemented by a Special Purpose Vehicle (SPV) which shall complete the setting up of the Plastic Park in a period of three years from the date of final approval.

Directions for the following 2 (two) items:

Read the following passage and answer the items that follow. Your answers to these items should be based in the passage only.

There are many barriers of female employment in the course of the country's economic development and modernization. Women's illiteracy stands in the way of women's employment in business and commerce, agriculture and industries, both traditional and modern.

Even on the political scene, their small representation in legislative assemblies shows how marginal women are in the whole political process. Due to immense poverty of the majority of the Asian population, the opportunity of education, participation in social and civic life are thus restricted to women belonging to the upper and middle layers of society. One factor is the decline in household industry. Since household industries constituted the largest traditional non-agricultural source of women's employment, women were the greatest victims of the economic transformation. Within the category of household industry, those activities performed by women - such as hand weaving, oil-processing, and rice pounding, faced stiff competition from factory production. Technological changes have a dampening effect on the demand for unskilled labor. Since the majority of the women in the industrial sector are unskilled, they are the main victims of this change.

The problem of violence and atrocities against women in India is one important problem relating to women which cannot be ignored.

Women in the Asian society have been victims of humiliation, torture and exploitation for as long as we have written records of social organization and family life. Today, though women are being gradually recognized as important, power-ful and meaningful contributors to the life of men; but some of the cruel practices thrive even today. In spite of the legislative measures adopted in favor of women in our society after In-dependence, the spread of education and women's gradual economic independence, countless women still continue to be victims of violence and extreme cruelty. The term 'atrocities against women' refers to as 'a cruel and wicked act against a woman which causes her emotional or physical injury or both'.

The Police Research Bureau, Delhi has referred to 'crime against women" under two categories; crimes under the Asian Penal Code, and crimes under the local and special laws.

The Bureau has identified seven crimes in the first category and four crimes in the sec-ond category of crimes. The seven crimes under the IPC are: rape, kidnapping and abduction, homicide for dowry, torture (physical and mental), molestation, eve-teasing and importation of girls up to 21 years of age, while the four crimes under the local and special laws are: commission of sati, dowry prohibition, immoral traffic, and indecent representation of women. There is a need to raise voice and fight against atrocities against women. Further, for each reported rape, many unreported rapes and for each reported eve-teasing many unreported eve-teasing cases occurs.

The number of reported cases of atrocities against women in India has increased in recent years. The increase in the number of reported not only indicates increased reporting but it only indicates an increased awareness about gender parity and women's rights.

Q.31) What is the purpose of referring the two categories for 'crime against women'?

1. It is helpful to identify the issue and its immediate solutions.
2. Immediate and quick action can be taken and rescue the victim.
3. Major physical crimes which needs immediate actions by IPC.
4. It is need of education and long term process which highly requires teaching under the moral methods by local and special laws.

Select the correct answer using the codes below:

a) 1 and 2 only
b) 3 and 4 only
c) All of above
d) None of above.

Q.31) Solution (a)

Option 'a' is the correct answer because option 'c' and 'd' are not correct and Option 'b' is about the names categories. According to the passage these categories are made because need of identifying issues and their immediate actions.

Q.32) Which statement(s) is/are not made by the writer according to the passage?

1. The number of reported cases of atrocities against women in India has decreased in recent years.

2. There is a need to raise voice and fight against atrocities against Women.
3. Further, for each reported rape, many unreported rapes and for each reported eve-teasing many unreported eve- teasing cases occurs.
4. Women are not confident and efficient to face and report the crimes against her nowadays.

Select the correct answer using the codes below:

a) 1 only
b) 2 and 3 only
c) 4 only
d) None of above

Q.32) Solution (c)

Option 'c' is the correct answer as mentioned above in passage.

Q.33) A train passes station platform in 36 sec and a man standing on the platform in 20 sec. if the speed of train is 54 km/hr, what is the length of platform?

a) 120 m
b) 240 m
c) 320 m
d) None of these

Q.33) Solution (b)

Speed = 54x 5/18 = 15 m/sec

Length of the train = 15 x 20 = 300 m

Let the length of platform be 'X' m

Then, (X+300)/36 = 15

On solving, X = 240 m

Q.34) A man takes 6 hours 15 minutes in walking a distance and riding back to starting place. He could walk both ways in 7 hours 45 minutes. The time taken by him to ride back both ways

is

a) 4 hours 20 min
b) 4 hours 30 min
c) 4 hours 45 min
d) 4 hours 50 min

Q.34) Solution (c)

Time taken in walking both the ways = 7 hours 45 minutes------ (1)

Time taken in walking one way and riding back = 6 hours 15 minutes------- (2)

By the equation (2) x 2 - (1), we have,

Time taken by the man in riding both ways

= 12 hours 30 minutes - 7 hours 45 minutes

= 4 hours 45 minutes.

Q.35) A train 125 m long passes a man, running at 5 km/hr in the same direction in which the train is going in 10 sec. The speed of the train is

a) 45 km/hr
b) 48 km/hr
c) 50 km/hr
d) 54 km/hr

Q.35) Solution (c)

The speed of the train relative to man = (125/10) m/s

= (25/2)x(18/5) km/hr

= 45 km/hr

Let the speed of the train be X km/hr. Then relative speed = (X-5) km/hr

Therefore, X-5 = 45

X = 50 km/hr