All India Civil Services Coaching Centre

(Under the aegis of Government of Tamil Nadu)

Answer Key Explanation

NCERT Geography

Time Allowed: 2 Hours **Maximum Marks: 200**

1. Ans: b

Exp: Statement 1 is incorrect:

- Aurora is caused by the interaction of solar wind with oxygen and nitrogen gas in upper atmosphere.
- Statement 2 is correct: Aurora in Northern hemisphere known as Aurora borealis and Aurora Australia in southern hemisphere.

2. Ans: d

Exp: Ecological hotspots are areas with outstanding biodiversity or a high concentration of biological values.

- These values can refer to threatened or endemic species, unique ecosystems, or globally important numbers of a particular species. The concept is based on an approach in which conservation activities and funds focus on a relatively small number of key sites for biodiversity.
- Statement 1,2,3 and 5 is correct: Eastern arc mountain , in Tanzania; Western Madagascar in Madagascar island; Western ghats in India; and Sinharaja forest in Srilanka.
- Statement 4 is incorrect: Western Ecuador and Colombian Chock in Colombia that is present in South America.

3. Ans: b

Exp: Effect of El-Nino

- Statement 2 and 4 is correct: The appearance of El- Nino cause global climatic imbalance., drought in India and Australia and heavy precipitation in coastal desert of Chile, Colorado.
- Statement 1 is correct: It brings cool, wet summer in Europe.
- Statement 3 is incorrect: Increases the frequency of Hurricanes and typhoons in the western Pacific and south China sea.
- It changes the nutrient circulation and availability within the North Pacific, with associated changes in the composition of pelagic species.

4. Ans: d

Exp: All the statements are correct.

- Factors affecting the salinity of the ocean:
- Statement 1 and 5 is correct: The salinity of water in the surface layer of depend mainly on evaporation and precipitation.
- Statement 2 is correct: Surface salinity is greatly influenced in coastal region by the influx of fresh water flow from rivers, and in polar regions by the process of freezing and thawing of ice.
- Statement 3 and 4 is correct: Salinity changes slightly due to winds resulting from difference in atmospheric pressure. The strong wind blowing throughout the year carry much of the warm and saline water from the western shores of the land in lower middle latitudes resulting in changes in salinity distribution.
- The ocean currents contribute to salinity variations.

5. **Ans: c**

Exp: Anthropogenic or manmade factors result in short term climatic changes. It involves the changes in the energy balance of the Earth - atmosphere system leading to changes in weather and climate.

- Statement 3 and 4 is correct: Burning fossil fuel and Deforestation are anthropogenic in nature.
- Statement 1,2 and 5 is incorrect: Volcanoes, plate tectonics, sunspot activities, Millankovitch cycle and ocean currents these are natural or Astronomical cause of climate change.

6. **Ans: c**

Exp: Statement 1 is correct: Koeppen identified a close relationship between the distribution of vegetation and climate.

- He selected certain values of temperature and precipitation and related them to the distribution of vegetation and used these values for classifying the climates.
- Statement 2 is correct: It is an empirical classification based on mean annual and mean monthly temperature and Precipitation.
- He selected specific values of temperature and precipitation and related them to the distribution of vegetation and used these values for classifying the climates.
- Statement 3 is incorrect: Koeppen recognized five major climatic groups, four of them are based on temperature and one on precipitation. The capital letters: A, C, D and E delineate humid climates and B dry climates.

7. **Ans: c**

Exp: Statement 1, 2 and 3 is correct:

- **Warm ocean currents:-** North Equatorial current, kuroshio current, El- Nino East Australian current in Pacific Ocean; North equatorial current, South equatorial current, gulf stream, Florida current, Brazil current in Atlantic ocean; Northeast monsoon current, southwest monsoon current, Agulhas current in Indian ocean.
- Statement 4 is incorrect: Somali current is cold ocean current.

8. **Ans: b**

Exp: Statement 1 is incorrect: Mists are frequent over mountains as the rising warm air up the slopes meets a cold surface.

- Statement 2 is correct: Fogs are drier than mist and they are prevalent where warm currents of air come in contact with cold currents.
- Statement 3 is correct: In mist, each nuclei contains a thicker layer of moisture.

9. **Ans: c**

Exp: The force exerted by the rotation of the earth is known as the Coriolis force.

- Statement 1 is incorrect: The coriolis force is directly proportional to the angle of latitude.
- Statement 2 is incorrect: Coriolis force is maximum at the pole not at the equator. It is absent at the equator.
- Statement 3 is incorrect: Absence of Coriolis force is one of the reason why tropical cyclone are not formed at equator.

10. **Ans: a**

Exp: Conditions required for the origin of tropical cyclone.

- Statement 1 is correct: Large sea surface with temperature higher than 27° C.
- Statement 2 is correct: Presence of the Coriolis force.
- Statement 3 is incorrect: Small variations in the vertical wind speed.
- A pre-existing weak low- pressure area or low- level-cyclonic circulation.
- Statement 4 is correct: Upper divergence above the sea level system.

11. Ans: d

Exp: The pattern of the movement of the planetary winds is called the general circulation of the atmosphere. The pattern of planetary winds largely depends on :

- Statement 1 is correct: latitudinal variation of atmospheric heating
- Statement 3 is correct: emergence of pressure belts
- the migration of belts following apparent path of the sun
- Statement 2 is correct: distribution of continents and oceans
- Statement 4 is incorrect: the rotation of earth

12. Ans: a

Exp: The correct sequence is as-

- Plunge pool- point bar- levees- ox bow lake
- Uttrakhand is situated in mountainous region and it is origin point of many rivers.
- So, in this region mostly the rivers are in her youth stage. Between Uttrakhand and West Bengal , there are two more states namely Uttar Pradesh and Bihar.
- Uttar Pradesh or Bihar are placed in plain, therefore while crossing these states the river experiences the mature stage. West Bengal is situated on the mouth of the river, so in this stage river experiences the old stage.
- Landforms related to youth stage of river are:- V- shaped valley, gorge- canyons, rapids, Cataract, waterfalls, plunge pool, structural benches, river cliff, slip off slopes.
- Landforms related to mature stage of river are:- truncated spur, alluvial fan, point bar, meander.
- Landforms related to old stage of river are: - flood plain, crevasse splays, backwards, Yazoo river, ox- bow lake, delta.

13. Ans: a

Exp: Statement 1 is correct:

- Karst topography is a landscape formed from the dissolution of soluble rocks such as limestone, dolomite, and gypsum.
- Erosional features in karts region are terra rosa, ladies, sinkholes, swallow-holes, dolines, solution pans, uvala, polje, blind valleys.
- Depositional features in Karst region are stalagmites, stalactites, pillar, curtains and etc.
- Statement 2 is incorrect: U-shaped valleys form through glacial erosion.
- Glaciation develops in established v shaped river valleys where the ice erodes the surrounding rocks to create a “U” shaped valley with a flat bottom and steep sides. Glacier movement is driven by gravity.
- Statement 3 is correct: Horns are sharp pointed and steep-sided peaks. They are formed by headward erosion of cirque wall.
- When the divide between two cirque walls gets narrow because of progressive erosions, it results in the formation of a saw-toothed ridge called Arete.
- Statement 4 is incorrect: Spit is depositional landform in coastal area. It is a streamlined ridge of sediment extending in the direction of Long shore current.

14. Ans: b

Exp: The number of factors do dispose towards the deposition of deltaic sediments are:

- Statement 1 is correct: the coastline is tectonically stable.
- Statement 2 is incorrect: the water is shallow offshore.
- Statement 3 is incorrect: the strength of waves and currents should be low so that sediments deposition take place.

- Statement 4 is correct: the quantity of sediment supply is sufficient.
- The extent of the tidal range and its influence.

15. Ans: b

Exp: Statement 1 is incorrect:

- Alluvial fans are depositional feature by river. Alluvial fans are formed when streams flowing from higher levels break into foot slope plains of low gradient.
- Normally very coarse load is carried by streams flowing over mountain slopes. This load becomes too heavy for the streams to be carried over gentler gradients and gets dumped and spread as a broad low to high cone shaped deposit called alluvial fan.
- Statement 2 is incorrect: The streams which flow over fans are not confined to their original channels for long and shift their position across the fan forming many channels called distributaries.
- Statement 3 is correct: Alluvial fan-in humid areas show normally low cones with gentle slope from head to toe and they appears high cones with steep slope in arid and semi-arid climates.

16. Ans: c

Exp: The upper course of river is dominated by erosional features.

- Statement 1 is correct: Cataracts are type of rapids but falls greater than those of rapids.
- Statement 2 is incorrect: Truncated spurs are generally seen in middle course of the river. These are formed by lateral erosion.
- Statement 3 is correct: Beneath the waterfalls, the great force of water falls usually wears out a plunge- pool.
- Statement 4 is correct: Predominant vertical corrosion in youth stage gives rise to deep narrow and steeped V- shaped valley called gorges.

17. Ans: d

Exp: Soil is a living, naturally occurring dynamic system at the interface of air and rock. Soil forms in response to forces of climate and organisms that act on parent material in a specific landscape (topography) over a period of time.

- There are five factors of soil formation:
- Statement 3 and 4 is incorrect: Climate and biological factors are active in nature, these act as catalysts in the formation of soil.
- Statement 1 and 2 is correct: Topography, parent material and time is passive factor which help in soil formation.

18. Ans: b

Exp: Mechanical weathering depend on some applied forces:

- Statement 1 is correct: gravitational forces such as overburden pressure, load and shearing stress;
- Statement 2 is correct: expansion forces due to temperature changes, crystal growth or animal activity;
- Statement 3 is correct: water pressures controlled by wetting and drying cycle.
- Statement 4 is incorrect: A group of weathering processes viz; solution, carbonation, hydration, oxidation and reduction act on the rocks to decompose, dissolve or reduce them to a fine clastic state through chemical reactions by oxygen, surface and/or soil water and other acids. These are chemical weathering processes.

19. Ans: b

Exp: Agents of metamorphism

- Metamorphism happens when rocks are forced down to lower levels by tectonic processes or when molten magma rising through the crust comes in contact with the crustal rocks or the underlying rocks

are exposed to great amounts of pressure by overlying rocks.

- Statement 1,2 and 3 are correct: The agents of metamorphism include heat, compression (stress), and chemically active fluids like magmatic water.
- During metamorphism, rocks are often subjected to all three metamorphic agents simultaneously.
- However, the degree of metamorphism and the contribution of each agent vary greatly from one environment to another
- Statement 4 is incorrect: biological **activity have no role in metamorphism.**

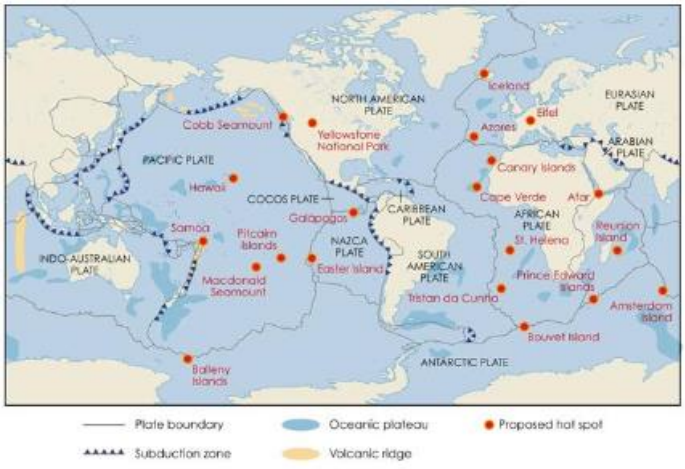
20. Ans: a

Exp: The forces deriving their strength from the earth's exterior or originating in the earth's atmosphere are called exogenic forces or external forces.

- Exogenic
  forces cause wearing down in the earth's surface and are, therefore, often called land wearing force
- Statement 1 and 3 is correct: wind and river cause wearing down the earth's surface.
- Statement 2 and 4 is incorrect: Volcanoes and radioactivity is derived from interior of the earth.

21. Ans: c

Exp:



- Hotspot volcanism is a type of volcanism that typically occurs at the interior parts of the lithospheric plates rather than at the zones of convergence and divergence (plate margins). These are mantle plumes.
- The mantle plume provides a continuous supply of abnormally hot magma to a fixed location in the mantle referred to as a hotspot.

22. Ans: c

Exp: Depending upon the mode of formation sedimentary rocks are classified into three major groups:

- Statement 1 is correct: mechanically formed — sandstone, conglomerate, limestone, shale, loess etc. Are examples
- Statement 2 is incorrect: organically formed — geyserite, chalk, limestone, coal etc. are some examples;
- Statement 3 is correct: chemically formed — chert, limestone, halite, potash etc. are some examples

23. Ans: c

Exp: Statement 1 is correct: The driving force behind plate tectonics is convection in the mantle. These currents are generated due to radioactive elements causing thermal differences in the mantle.

- Statement 2 is correct: .At transform boundaries, the crust is neither produced nor destroyed as the plates slide horizontally past each other.
- Statement 3 is incorrect: The Mid-Atlantic Ridges are a good example of a divergent boundaries.

24. Ans: a

Exp: Statement 1 is incorrect: Abyssal plains are more extensive in Atlantic Ocean and less extensive in Pacific and India ocean.

- Statement 2 is correct: Abyssal plain is found at an average depth between 3000 and 6000 meters.
- Statement 3 is correct: They are among the flattest, smoothest and least explored regions on earth.

25. Ans: c

Exp: Alfred Wegener suggested continental Drift Theory.

- According to Continental Drift Theory there existed one big landmass which he called Pangaea which was covered by one big ocean called Panthalassa.
- A sea called Tethys divided the Pangaea into two huge landmasses: Laurentia (Laurasia) to the north and Gondwanaland to the south of Tethys.
- Statement 1 and 2 is correct: Wegener proposed that the movement accountable for the drifting of the continents was instigated by tidal force and pole- fleeing force. The polar-fleeing force relates to the rotation of the earth.
- Statement 3 is incorrect: Tides are caused by attraction of sun and moon.
- Statement 4 is incorrect: Convectional currents are responsible for the movement of plates and Volcanoes.
- Though, most of the scholars considered these forces to be insufficient.

26. Ans: c

Exp: Intrusive volcanic features

- Statement 1 is correct: Batholiths are large granitic rock bodies formed due to solidification of hot magma inside the earth.
- They appear on the surface only after the denudation processes remove the overlying materials.
- Lopoliths are large dome-shaped intrusive bodies connected by a pipe-like conduit from below.
- These are intrusive counterparts of an exposed domelike batholith.
- Statement 2 is correct: The near horizontal bodies of the intrusive igneous rocks are called sill. The thinner ones are called sheets.
- Dykes are formed, When the lava makes its way through cracks and the fissures developed in the land, it solidifies almost perpendicular to the ground.
- Other intrusive features of volcanoes are laccoliths, volcanic necks, phaccoliths.

27. Ans: b

Exp: Statement 1 is incorrect:

- Cratons are found interior of the tectonic plates. These are stable portion of the continental crust from regions that are more geologically active and unstable
- Statement 2 is correct: Cratons are composed of ancient crystalline basement rock.
- Statement 3 is incorrect: Cratons are intrusive in nature while shields are extrusive in nature.

28. Ans: c

Exp: Statement 1 is correct:

- The speed of tsunami waves are related to depth of the water. The depth of the water decreases, the speed of the tsunami reduces.
- But the change of total energy of the tsunami remains constant.
- Statement 2 is incorrect: They frequently occur in the Pacific, where dense oceanic plates slide under the lighter continental plates. When these plates fracture they provide a vertical movement of the seafloor that allows a quick and efficient transfer of energy from the solid earth to the ocean.
- Statement 3 is correct: Tsunamis have a small amplitude offshore.

29. Ans: a

Exp: Statement 1 is correct:

- P-waves are also called as the longitudinal waves because the displacement of the medium is in the same direction as, or the opposite direction to, (parallel to) the direction of propagation of the wave; or compressional waves because they produce compression and rarefaction when travelling through a medium; or pressure waves because they produce increases and decreases in pressure in the medium.
- Statement 2 is correct: These waves are of relatively high frequency and are the least destructive among the earthquake waves. P-wave velocity in earthquakes is in the range 5 to 8 km/s. The P-waves travel faster and are the first to arrive at the surface.
- Statement 3 is incorrect: They can travel in all mediums, and their velocity depends on shear strength (elasticity) of the medium.

30. Ans: c

Exp: Sources of Information about the interior of the earth

Direct Sources:

- Statement 3 is incorrect: Rocks from mining area
- Volcanic eruptions

Indirect Sources:

- By analysing the rate of change of temperature and pressure from the surface towards the interior.
- Statement 1 is correct: Meteors, as they belong to the same type of materials earth is made of.
- Statement 2 is correct: Gravitation, which is greater near poles and less at the equator.
- Gravity anomaly, which is the change in gravity value according to the mass of material, gives us information about the materials in the earth's interior.
- Statement 4 is correct: Magnetic sources.
- Statement 5 is correct: Seismic Waves: the shadow zones of body waves (Primary and secondary waves) give us information about the state of materials in the interior.

31. Ans: d

Exp: Jovian planets

- Jupiter, Saturn, Uranus, Neptune (Outer Planets)
- Their size is large (about 10 times the size of the Earth)
- Statement 1 is correct: They are sometimes called gas giants because they are large and made mostly of gases.
- Statement 2 is correct: They are having helium and hydrogen atmosphere.
- Statement 3 is incorrect: They formed far from the parent star.
- Statement 4 is correct: They have a large number of natural satellites.

32. Ans: b

Exp: Evolution of the earth's atmosphere:

- There are three stages in the evolution of the present atmosphere. The first stage is marked by the loss of primordial atmosphere.
- In the second stage, the hot interior of the earth contributed to the evolution of the atmosphere. As the earth cooled, the water vapor released started getting condensed. The carbon dioxide in the atmosphere got dissolved in rainwater and the temperature further decreased causing more condensation and more rains.
- Finally, the composition of the atmosphere was modified by the living world through the process of photosynthesis.

33. Ans: b

Exp: Statement 1 is incorrect:

- The earth was mostly in a volatile state during its primordial stage. Due to gradual increase in density the temperature inside has increased. As a result the material inside started getting separated depending on their densities.
- Statement 2 is correct: Heavier materials (like iron) sink towards the center of the earth and the lighter ones move towards the surface.
- Statement 3 is incorrect: through the process of differentiation that the earth forming material got separated into different layers.

34. Ans: a

Exp: Conditions Favourable for Tropical Cyclone Formation

- Option 'a' is correct: Large sea surface with temperature higher than 27° C,
- Presence of the Coriolis force enough to create a cyclonic vortex,
- 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

35. Ans: b

Exp: Some Famous Local Storms of Hot Weather Season

- Statement 1 is incorrect: Mango Shower: Towards the end of summer, there are pre-monsoon showers which are a common phenomenon in Kerala and coastal areas of Karnataka. Locally, they are known as mango showers since they help in the early ripening of mangoes.
- Statement 2 is correct: Blossom Shower: With this shower, coffee flowers blossom in Kerala and nearby areas.
- Statement 3 is incorrect: Nor Westers: These are dreaded evening thunderstorms in Bengal and Assam. Their notorious nature can be understood from the local nomenclature of 'Kalbaisakhi', a calamity of the month of Baisakh. These showers are useful for tea, jute and rice cultivation.
- In Assam, these storms are known as "Bardoli Chheerha".

36. Ans: b

Exp: EI-Nino and the Indian Monsoon

- Statement 1 is incorrect: EI-Nino is a complex weather system that appears once every three to seven years, bringing drought, floods and other weather extremes to different parts of the world.
- Statement 2 is correct and Statement 3 is incorrect:
- The system involves oceanic and atmospheric phenomena with the appearance of warm currents off the coast of Peru in the Eastern Pacific and affects weather in many places including India.
- EI-Nino is merely an extension of the warm equatorial current which gets replaced temporarily by cold Peruvian current or Humbolt current (locate these currents in your atlas). This current increases the temperature of water on the Peruvian coast by 10°C.

This results in:

- the distortion of equatorial atmospheric circulation;
- irregularities in the evaporation of sea water;
- reduction in the amount of planktons which further reduces the number of fish in the sea.

37. Ans: d

Exp: Cold Wave Situation in Delhi

Reasons for the fall in Minimum Temperature:

- Absence of cloud cover in the region: Clouds trap some of the outgoing infrared

radiation and radiate it back downward, warming the ground.

- Snowfall in the upper Himalayas that has blown cold winds towards the region.
- Subsidence of cold air over the region: Subsidence is the downward movement of cold and dry air closer to the surface.
- Prevailing weak La Nina conditions in the Pacific Ocean
- Hence, all the statements are correct.

38. Ans: a

Exp: Indian Ocean Currents

- The currents in the northern portion of the Indian Ocean change their direction from season to season in response to the seasonal rhythm of the monsoons.
- The effect of winds is comparatively more pronounced in the Indian Ocean.
- The general pattern of circulation in southern part of the Indian Ocean is quite similar to that of southern Atlantic and Pacific oceans. It is less marked by the seasonal changes.
- The south equatorial current, partly led by the corresponding current of the Pacific Ocean, flows from east to west.
- It splits into two branches, one flowing to the east of Madagascar known as Agulhas current and the other between Mozambique and Western Madagascar coast known as Mozambique current.
- At the southern tip of Madagascar, these two branches mix and are commonly called as the Agulhas current. It still continues to be a warm current, till it merges with the West Wind Drift.
- The West Wind Drift, flowing across the ocean in the higher latitudes from west to east, reaches the southern tip of the west coast, of Australia.
- One of the branches of this cold current turns northwards along the west coast of Australia. This current, known as the West Australian current, flows northward to feed the south equatorial current.
- Note: Falkland current belongs to the South Atlantic Ocean. Therefore, option 'a' is correct.

39. Ans: b

Exp: Black Soil

- Option 'b' is correct: Black soil covers most of the Deccan Plateau which includes parts of Maharashtra, Madhya Pradesh, Gujarat, Andhra Pradesh and some parts of Tamil Nadu.
- In the upper reaches of the Godavari and the Krishna, and the north-western part of the Deccan Plateau, the black soil is very deep.
- These soils are also known as the 'Regur Soil' or the 'Black Cotton Soil'.
- The black soils are generally clayey, deep and impermeable.
- They swell and become sticky when wet and shrink when dried. So, during the dry season, these soils develop wide cracks.
- Because of this character of slow absorption and loss of moisture, the black soil retains the moisture for a very long time, which helps the crops, especially; the rain fed ones, to sustain even during the dry season.

40. Ans: b

Exp: Factors Influencing Indian Climate

- Latitudinal location
- Distance from the Sea
- The Himalayas
- Physiography
- Monsoon Winds
- Upper Air Circulation
- El Nino and La Nina
- Tropical Cyclones and Western Disturbances

Note: There is no direct effect of Coriolis force on Indian climate.

- Except for Point 1, rest of the factors are responsible for influencing India Climate.
- Hence, the correct answer to this question is Option 'b'.

41. Ans: b

Exp: The Indian Desert

- To the northwest of the Aravali hills lies the Great Indian Desert.
- Statement 1 is not correct: It is a land of undulating topography dotted with longitudinal dunes and barchans (Note: Ravines and gullies are developed by linear fluvial erosion leading to the formation of badland topography.)
- This region receives low rainfall below 150 mm per year; hence, it has arid climate with low vegetation cover.
- Statement 2 is correct: It is because of these characteristic features that this is also known as Marusthali.
- It is believed that during the Mesozoic era, this region was under the sea.
- Statement 3 is correct: Though the underlying rock structure of the desert is an extension of the peninsular plateau, yet, due to extreme arid conditions, its surface features have been carved by physical weathering and wind actions.

42. Ans: b

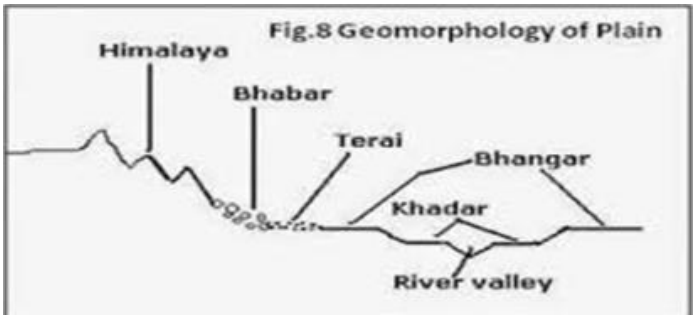
Exp: Satpura range

- Option b is correct: The Satpura range is formed by a series of scarped plateaus on the south, generally at an elevation varying between 600-900 m above the mean sea level.
- Satpura range is a series of seven mountains.
- This forms the northernmost boundary of the Deccan plateau.
- It is a classic example of the relict mountains which are highly denuded and form discontinuous ranges.
- Dhupgarh (1,350 m) near Pachmarhi on Mahadev Hills is its highest peak.

43. Ans: b

Exp: The Northern Plains (Option b is correct)

- From the north to the south, the northern plains 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.
- Bhabar is a narrow belt ranging between 8-10 km parallel to the Shiwalik foothills at the break-up of the slope. As a result of this, the streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in this zone.
- South of the Bhabar is the Tarai belt, with an approximate width of 10-20 km where most of the streams and rivers re-emerge without having any properly demarcated channel, thereby, creating marshy and swampy conditions known as the Tarai
- The south of Tarai is a belt consisting of old and new alluvial deposits known as the Bhangar and Khadar respectively. These plains have characteristic features of mature stage of fluvial erosional and depositional landforms such as sand bars, meanders, oxbow lakes and braided channels.



44. Ans: a

Exp: The Peninsular Plateau

- Delhi ridge in the northwest, (extension of Aravalis), the Rajmahal hills in the east,

Gir range in the west and the Cardamom hills in the south constitute the outer extent of the peninsular plateau.

- Statement 3 is not correct: However, an extension of this is also seen in the northeast, in the form of Shillong and Karbi-Anglong plateau.
- Statement 1 is correct: The Peninsular India is made up of a series of pat land plateaus such as the Hazaribagh plateau, the Palamu plateau, the Ranchi plateau, the Malwa plateau, the Coimbatore plateau and the Karnataka plateau, etc.
- Statement 2 is not correct: This is one of the oldest and the most stable landmass of India. The general elevation of the plateau is from the west to the east, which is also proved by the pattern of the flow of rivers.

45. Ans: d

Exp: GODAVARI BASIN

- Statement 1 is correct: The Godavari is the largest Peninsular River. It rises from the slopes of the Western Ghats in the Nasik district of Maharashtra.
- Its length is about 1500 km. It drains into the Bay of Bengal. Its drainage basin is also the largest among the peninsular rivers.
- Statement 2 is not correct: The basin covers parts of Maharashtra, Madhya Pradesh, Odisha and Andhra Pradesh (not Tamil Nadu).
- Statement 3 is correct: The Godavari is joined by a number of tributaries such as the Purna, the Wardha, the Pranhita, the Manjra, the Wainganga and the Penganga. The last three tributaries are very large.
- Note: Because of its length and the area it covers, it is also known as the 'Dakshin Ganga'.

46. Ans: b

Exp: KAREWAS

- Option b is correct: Karewas are the thick deposits of glacial clay and other materials embedded with moraines.
- The Kashmir Himalayas are also famous for Karewa formations, which are useful for the cultivation of Zafran, a local variety of saffron.

47. Ans: a

Exp: CHAMBAL RIVER

- The Chambal rises in the highlands of Janapao Hills (700 m) in the Vindhyan Range.
- It flows through the Malwa Plateau.
- It joins the Yamuna in Etawah district of Uttar Pradesh.
- The river flows much below its banks due to severe erosion because of poor rainfall and numerous deep ravines have been formed in the Chambal Valley, giving rise to badland topography. (Arid Landforms).
- The total length of the river is 1,050 km.

48. Ans: d

Exp: KARST LANDFORMS

- Karst is a landscape which is underlain by limestone which has been eroded by dissolution, producing towers, fissures, sinkholes, etc.
- Statement 2 is correct: It is so named after a province of Yugoslavia on the Adriatic Sea coast where such formations are most noticeable.
- Statement 1 is correct: Karst topography is a landscape formed from the dissolution of

soluble rocks such as limestone, dolomite, and gypsum.

- Statement 3 is correct: It is characterized by underground drainage systems with sinkholes, caves etc.

49. Ans: c

Exp: Hot Desert and Mid-Latitude desert climate:

- The aridity of the hot deserts is mainly due to the effects of off-shore trade winds; hence they are also called trade wind deserts.
- The temperate deserts are rainless because of either continentally (e.g., Gobi Desert) or rain-shadow effect (Patagonian Desert).
- The major hot deserts of the world are located on the western coasts of continents between latitudes 15° and 30°N and S.

Hot desert

- Sahara Desert (includes Libya)
- Great Australian Desert
- Arabian Desert
- Iranian Desert
- Thar Desert
- Kalahari Desert
- Namib Deserts

Note:

- Point 3 is not correct: Patagonia is a cold desert.
- Hence, the correct answer to this question is Option 'c'.

50. Ans: a

Exp: China type climate (Option a is correct)

- It is also called Temperate Monsoon.
- Rainfall is more than moderate.
- This type of climate is characterised by warm moist summer and a cool dry winter.
- This is very much influenced by marine phenomenon.

51. Ans: a

Exp: OCTOBER HEAT

- The retreating southwest monsoon season is marked by clear skies and rise in temperature.
- The land is still moist.
- Statement 'a' is correct: Owing to the conditions of high temperature and humidity, the weather becomes rather oppressive. This is commonly known as the 'October heat'.
- In the second half of October, the mercury begins to fall rapidly, particularly in northern India.
- The weather in the retreating monsoon is dry in north India but it is associated with rain in the eastern part of the Peninsula. Here, October and November are the rainiest months of the year

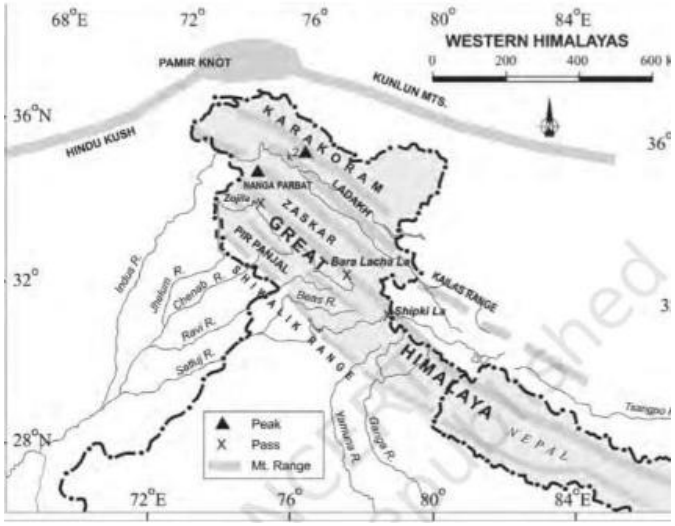
52. Ans: b

Exp: The Northern Plains

- Statement 1 is not correct: The south of Tarai is a belt consisting of old and new alluvial deposits known as the Bhangar and Khadar respectively.
- Statement 2 is correct: These plains have characteristic features of mature stage of fluvial erosional and depositional landforms such as sand bars, meanders, oxbow lakes and braided channels.
- Statement 3 is not correct: The Brahmaputra plains are known for their riverine islands and sand bars.
- Most of these areas are subjected to periodic floods and shifting river courses forming braided streams.

53. Ans: b

Exp: Refer to the following map:



54. Ans: b

Exp: The Darjeeling and Sikkim Himalayas

- Option b is correct: They are flanked by Nepal Himalayas in the west and Bhutan Himalayas in the east. It is relatively small but is a most significant part of the Himalayas.
- Known for its fast-flowing rivers such as Tista, it is a region of high mountain peaks like Kanchenjunga (Kanchengiri), and deep valleys.
- The higher reaches of this region are inhabited by Lepcha tribes while the southern part, particularly the Darjeeling Himalayas, has a mixed population of Nepalis, Bengalis and tribals from Central India.
- The British, taking advantage of the physical conditions such as moderate slope, thick soil cover with high organic content, well distributed rainfall throughout the year and mild winters, introduced tea plantations in this region.

55. Ans: c

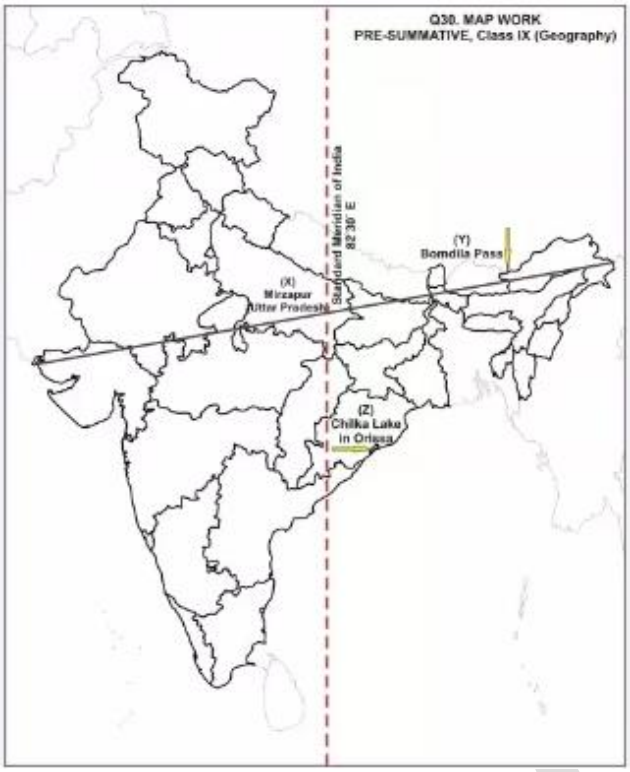
Exp: Peninsular Block

- The northern boundary of the Peninsular Block may be taken as an irregular line running from Kachchh along the western flank of the Aravali Range near Delhi and then roughly parallel to the Yamuna and the Ganga as far as the Rajmahal Hills and the Ganga delta.
- Apart from these, the Karbi Anglong and the Meghalaya Plateau in the northeast and Rajasthan in the west are also extensions of this block.
- Statement 1 is correct: The north-eastern parts are separated by the Malda fault in West Bengal from the Chotanagpur plateau. In Rajasthan, the desert and other desert–like features overlay this block.
- Statement 3 is correct: The Peninsula is formed essentially by a great complex of very ancient gneisses and granites, which constitutes a major part of it.
- Statement 2 is not correct: Since the Cambrian period, the Peninsula has been standing like a rigid block with the exception of some of its western coast which is submerged beneath the sea and some other parts changed due to tectonic activity without affecting the original basement.

56. Ans: d

Exp: Indian Standard Time

- Statement 2 is not correct: There is a general understanding among the countries of the world to select the standard meridian in multiples of 7°30' of longitude.
- That is why 82°30' E has been selected as the 'standard meridian' of India.
- Statement 1 is not correct: Indian Standard Time is ahead of Greenwich Mean Time by 5 hours and 30 minutes.
- Statement 3 is not correct: There are some countries where there are more than one standard meridian due to their vast east-to-west extent. For example, the USA has seven time zones.



57. Ans: c

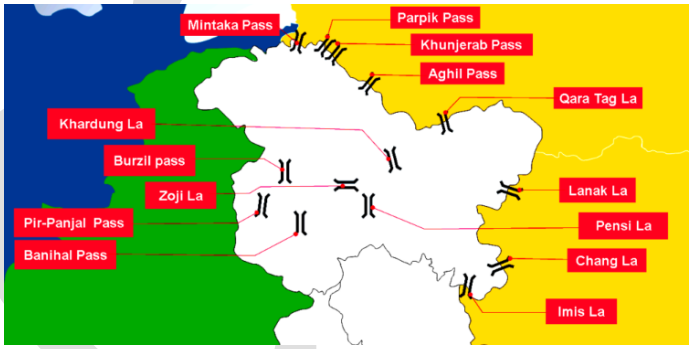
Exp: The Himachal and Uttarakhand Himalayas

- All the three ranges of Himalayas are prominent in this section also.
- These are the Great Himalayan range, the Lesser Himalayas (which is locally known as Dhauladhar in Himachal Pradesh and Nagtibha in Uttarakhand) and the Shiwalik range from the North to the South.
- Statement 1 is not correct: Dehra-Dun is the largest of all the duns with an approximate length of 35-45 km and a width of 22-25 km.
- Statement 2 is correct: The famous 'Valley of flowers' is also situated in this region.
- Statement 3 is correct: The places of pilgrimage such as the Gangotri, Yamunotri, Kedarnath, Badrinath and Hemkund Sahib are also situated in this part.
- The region is also known to have five famous Prayags (river confluences).

58. Ans: c

Exp: Major passes in Kashmir

- Some of the important passes of the region are Zoji La on the Great Himalayas, Banihal on the Pir Panjal, Photu La on the Zaskar and Khardung La on the Ladakh range.
- Option c is correct: Note: Nathu La (connects Sikkim with Tibet) and Niti Pass (connects Uttarakhand with Tibet) are not located in Kashmir.



59. Ans: d

Exp: Refer to the following table:

The Himalayan River System	The Peninsular River System
1. Some of the longest rivers belong to the Himalayan river system.	1. Peninsular rivers are not as long as the Himalayan rivers.
2. The catchment areas and basins of the Himalayan rivers are very large.	2. The catchment areas and basins of the Peninsular rivers are of comparatively smaller size.
3. Himalayan rivers are larger in number.	3. Peninsular rivers are smaller in number.
4. The Himalayan rivers originate from the snow covered areas and receive water from rainfall as well from snow-melt. Therefore, they are perennial.	4. The Peninsular rivers depend entirely upon rain water and are seasonal.
5. The Himalayan rivers form deep gorges.	5. The Peninsular rivers flow in shallow valleys.
6. The Himalayan rivers form river meanders and often change their course.	6. The Peninsular rivers follow more or less straight course and do not change their course.
7. These rivers are useful for irrigation and navigation.	7. These rivers are not suited for irrigation and navigation.
8. These rivers flow across the young fold mountains and are still in a youthful stage.	8. These rivers have been flowing in one of the oldest plateaus of the world and have reached maturity.

60. Ans: d

Exp: The Himalayas along with other peninsular mountains are young, weak and flexible in their geological structure unlike the rigid and stable Peninsular Block.

- Consequently, they are still subjected to the interplay of exogenic and endogenic forces, resulting in the development of faults, folds and thrust plains.
- These mountains are tectonic in origin, dissected by fast flowing rivers which are in their youthful stage.

- Option d is correct: Various landforms like gorges, V shaped valleys, rapids, waterfalls, etc. are indicative of this stage.

61. Ans: b

Exp: The Tropic of Cancer, also referred to as the Northern Tropic, is the most northerly circle of latitude on Earth at which the Sun can be directly overhead.

- This occurs on the June solstice, when the Northern Hemisphere is tilted toward the Sun to its maximum extent.
- The Tropic of Cancer passes through 8 Indian states namely, Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Tripura and Mizoram
- Except for Maharashtra; rest of the states given in the question are correct. Hence, the correct answer to this question is Option b.

62. Ans: a

Exp: Statement 2 is incorrect: Economic Problems:

- The decreasing employment opportunities in the rural as well as smaller urban areas of the developing countries consistently push the population to the urban areas.
- The enormous migrant population generates a pool of unskilled and semi-skilled labour force, which is already saturated in urban areas.

Socio-cultural Problems:

- Cities in the developing countries suffer from several social ills. Insufficient financial resources fail to create adequate social infrastructure catering to the basic needs of the huge population.
- Statement 1 is correct: available educational and health facilities remain beyond the reach of the urban poor.
- Health indices also, present a gloomy picture in cities of developing countries. Lack of employment and education tends to aggravate the crime rates.
- Statement 3 is correct: Male selective migration to the urban areas distorts the sex ratio in these cities.

Environmental Problems :

- The large urban population in developing countries not only uses but also disposes off a huge quantity of water and all types of waste materials.
- Many cities of the developing countries even find it extremely difficult to provide the minimum required quantity of potable water and water for domestic and industrial uses.
- Statement 4 is incorrect: sewerage system creates unhealthy conditions.
- Massive use of traditional fuel in the domestic as well as the industrial sector severely pollutes the air.
- The domestic and industrial wastes are either let into the general sewerages or dumped without treatment at unspecified locations.
- Huge concrete structures erected to accommodate the population and economic play a very conducive role to create heat islands.

63. Ans: a

Exp: Statement 1 is incorrect: These are constructed and maintained by state government.

- Statement 2 is correct: This constitute 4 per cent of total road length of the country.
- Statement 3 ia correct: These roads are connected with National Highways.

64. Ans: c

Exp: Option c is correct: Every January after the harvest season Jon Beel Mela takes place in Jagiroad, 35 km away from Guwahati and it is possibly the only fair. In India, where barter system is still alive. A big market is organised during this fair and people from various tribes and communities exchange their products.

- Option a is incorrect: The Sonepur Cattle Fair held on Kartik Poornima (full moon day) over the months of (Nov-Dec) in Bihar, on the confluence of river Ganges and Gandak. The Sonepur Fair is the only one of its kind in the world, it is the biggest cattle fair in Asia and usually lasts from between fifteen days to one month in duration.
- Option b is incorrect: Hemis Gompa Fair is celebrated every year on the birth anniversary of Guru Padmasambhava at the Hemis Monastery. The main events are held at the Buddhist monastery of Ladakh, Hemis Monastery.
- Option d is incorrect: Pushkar mela is held in the town of Pushkar in Rajasthan. The Pushkar Camel Fair was started to attract the local camel and cattle traders for a business meeting during the holy Kartik Purnima festival.

65. Ans: a

Exp: Pair 4 is correct:

- Oil Ports: These ports deal in the processing and shipping of oil. Some of these are tanker ports and some are refinery ports.
- Maracaibo in Venezuela, Esskhira in Tunisia, Tripoli in Lebanon are tanker ports.
- Pair 1 is correct: Ports of Call: These are the ports which originally developed as calling points on main sea routes where ships used to anchor for refuelling, watering and taking food items.
- Later on, they developed into commercial ports. Aden, Honolulu and Singapore are good examples.
- Pair 2 is incorrect: Packet Station: These are also known as ferry ports. These packet stations are exclusively concerned with the transportation of passengers and mail across water bodies covering short distances.
- These stations occur in pairs located in such a way that they face each other across the water body, e.g. Dover in England and Calais in France across the English Channel.
- Pair 3 is incorrect: Entrepot Ports: These are collection centres where the goods are brought from different countries for export. Singapore is an entrepot for Asia. Rotterdam for Europe, and Copenhagen for the Baltic region.

66. Ans: a

Exp: Moscow-Kazan-Omsk-Chita

67. Ans: c

Exp: Point 1,2 and 3 is correct:

- There are three shallow water-filled depressions or shallow lake in Suez canal : Lake Manzala, Lake Timsah, Great biter lake and Little biter lake.
- Point 4 is incorrect: Lake Turkana, formerly known as Lake Rudolf, is a lake in the Kenyan Rift Valley, in northern Kenya.

68. Ans: a

Exp: The iorn and steel industry is one of the most complex and capital-intensive industries and is concentrated in the advanced countries of North America, Europe and Asia.

- In U.S.A, most of the production comes from the north Appalachian region (Pittsburgh), Great Lake region (Chicago-Gary, Erie, Cleveland, Lorain, Buffalo and Duluth) and the Atlantic Coast (Sparrows Point and Morisville).
- The industry has also moved towards the southern state of Alabama. Pittsburg area is now losing ground. It has now become the "rust bowl" of U.S.A. In Europe, U.K., Germany, France, Belgium, Luxembourgh, the Netherlands and Russia are the leading producers.
- Pair 2 is incorrect: The important steel centres are Scun Thorpe, Port Talbot, Birmingham and Sheffield in the U.K.
- Duisburg, Dortmund, Dusseldorf and Essen in Germany
- Le Creusot and St. Ettienne in France
- Pair 3 is correct: Moscow, St. Petersburgh, Lipetsk, Tula, in Russia.
- Pair 4 is incorrect: Krivoi Rog, and Donetsk in Ukraine.
- In Asia, the important centres include Nagasaki and Tokyo-Yokohama in Japan
- Pair 1 is correct: Shanghai, Tienstin and Wuhan in China.
- Jamshedpur, Kulti-Burnpur, Durgapur, Rourkela, Bhilai, Bokaro, Salem, Visakhapatnam and Bhadravati in India.

69. Ans: a

Exp: Statement 1 is correct: Cheap water transport has facilitated the jute mill industry along the Hugli.

- Statement 2 is incorrect: Cotton textiles and vegetable oils are location based industries. These industries needs specific raw material and climate.
- Therefore, these are not footloose industries.
- Statement 3 is correct: Port towns in India have attracted industries.
- Statement 4 is incorrect: Sugar industry is the 2nd largest agro-based industry of India.

70. Ans: a

Exp: Modern manufacturing is characterized by:

- Point 1 is correct: A complex machine technology
- Point 2 is correct: Extreme specialization
- Point 3 is incorrect: Division of labour for producing more goods with less low costs
- Point 4 is correct: Vast capital
- Point 5 is correct: Large organisation
- Executive bureaucracy.

71. Ans: c

Exp: Commercial grain farming is mostly done in the temperate grasslands.

This type of agriculture is best developed in :

- Pair 1 is correct: Eurasia – steppes
- Pair 2 is correct: North America – Prairies
- Pair 3 is incorrect: Argentina – Pampas
- The Velds of South Africa
- Pair 4 is incorrect: Australia - Downs
- Canterbury Plains of New Zealand.

72. Ans: c

Exp: Intensive subsistence type of agriculture is characterised by dominance of the rice crop.

Characteristics of intensive subsistence farming:

- Statement 1 is correct: Land holdings are very small due to the high density of population.
- Statement 2 is correct: Farmers work with the help of family labour leading to intensive use of land.
- Use of machinery is limited and most of the agricultural operations are done by manual labour.
- Statement 3 is correct: Farm yard manure is used to maintain the fertility of the soil.
- Statement 4 is incorrect: In this type of agriculture, the yield per unit area is high but per labour productivity is low.

73. Ans: a

Exp: Point 1,2, 3 and 4 are correct: In mountain regions, such as Himalayas, Gujjars, Bakarwals, Gaddis and Bhotiyas tribes are present. These tribal people migrate from plains to the mountains in summers and to the plains from the high altitude pastures in winters.

- Point 5 and 6 are incorrect: Todas are living in Tamilnadu , while Gonds are in central and South Central India.

74. Ans: c

Exp: Statement 1 is correct: Topical Africa, cattle are the most important livestock.

- Statement 2 is correct: Sahara and Asiatic deserts, sheep, goats and camel are reared.
- Statement 3 is incorrect: In the mountainous areas of Tibet and Andes, yak and llamas.
- Statement 4 is incorrect: In the Arctic and sub Arctic areas, reindeer.

75. Ans: d

Exp: All points are correct.

- Gathering is practised in: (i) high latitude zones which include northern Canada, Siberia and southern Chile; (ii) Low latitude zones such as the Amazon Basin, tropical Africa, Congo basin, Northern fringe of Australia and the interior parts of Southeast Asia.

76. Ans: d

Exp: The sex ratio in Asian urban areas remains male dominated due to the predominance of male migration. It is also worth noting that in countries like India, female participation in farming activity in rural area is fairly high.

- All points are correct.
- Shortage of housing, high cost of living, paucity of job opportunities and lack of security in cities, discourage women to migrate from rural to urban areas

77. Ans: d

Exp: Statement 1 is correct: The Gross happiness report has been released by the Sustainable Development Solutions Network at the United Nations.

- Statement 2 is correct: Bhutan is the only country in the world to officially proclaim the Gross National Happiness as the measure of the country's progress.
- Statement 3 is correct: Gross National Happiness Index encourages us to think of the spiritual, non- material and qualitative aspects of development.

78. Ans: c

Exp: Statement 1 is correct: A geographer, Griffith Taylor introduced another concept which reflects a middle path (Madhyam Marg) between the two ideas of environmental determinism and possibilism.

- He termed it as Neodeterminism or stop and go determinism. Those of you who live in cities and those who have visited a city, might have seen that traffic is regulated by lights on the cross-roads. Red light means 'stop', amber light provides a gap between

red and green lights 'to get set' and green light means 'go'.

- Statement 2 is correct: The concept shows that neither is there a situation of absolute necessity (environmental determinism) nor is there a condition of absolute freedom (possibilism).
- It means that human beings can conquer nature by obeying it. They have to respond to the red signals and can proceed in their pursuits of development when nature permits the modifications.
- Statement 3 is incorrect: Imprints of human activities are created everywhere; health resorts on highlands, huge urban sprawls, fields, orchards and pastures in plains and rolling hills, ports on the coasts, oceanic routes on the oceanic surface and satellites in the space.
- The earlier scholars termed this as possibilism. Nature provides opportunities and human being make use of these and slowly nature gets humanized and starts bearing the imprints of human endeavour.

79. Ans: b

Exp:

- Statement 1 is correct: Thomas Malthus in his theory (1798) stated that the number of people would increase faster than the food supply.
- Any further increase would result in a population crash caused by famine, disease and war.
- Statement 2 is incorrect: The preventive checks are better than the physical checks. For the sustainability of our resources, the world will have to control the rapid population increase.
- Statement 3 is correct: Positive checks exercise their influence on the growth of population by increasing the death rate. They are applied by nature

80. Ans: d

Exp: Point 1,2 and 4 is correct: The Push factors make the place of origin seem less attractive for reasons like unemployment, poor living conditions, political turmoil, unpleasant climate, natural disasters, epidemics and socio-economic backwardness.

- Point 3 is incorrect: Peace and tranquility of the region act as pull factor.
- The Pull factors make the place of destination seem more attractive than the place of origin for reasons like better job opportunities and living conditions, peace and stability, security of life and property and pleasant climate.

81. Ans: c

Exp: Point 1 ,2 and 4 are correct:

- There are three components of population change – births, deaths and migration.
- Point 3 and 5 is incorrect: Fertility and mortality is not components of population change.

82. Ans: b

Exp: Point 1 is correct: Some places attract more people because they have religious or cultural significance.

- In the same way – people tend to move away from places where there is social and political unrest.
- Many a times governments offer incentives to people to live in sparsely populated areas or move away from overcrowded places.
- Point 2 is correct: Health infrastructure and educational infrastructure also come under the social factor. It provide better healthcare and development prospects.
- Point 3 and 4 is incorrect: Industrialization and development of agricultural land is economical factors, which influence the distribution of population.

83. Ans: c

Exp: Point 1 is correct: Areas with mineral deposits attract industries.

- Mining and industrial activities generate employment. So, skilled and semi–skilled workers move to these areas and make them densely populated. Katanga Zambia copper belt in Africa is one such good example.
- Point 2 is correct: Urban center offer better employment opportunities, educational and medical facilities, better means of transport and communication. Good civic amenities and the attraction of city life draw people to the cities. It leads to rural to urban migration and cities grow in size.
- Mega cities of the world continue to attract large number of migrants every year.
- Point 4 is correct: Industrial belts provide job opportunities and attract large numbers of people. These include not just factory workers but also transport operators, shopkeepers, bank employees, doctors, teachers and other service providers. The Kobe-Osaka region of Japan is thickly populated because of the presence of a number of industries.
- Point 3 is incorrect: An extreme climate such as very hot or cold deserts are uncomfortable for human habitation. Areas with a comfortable climate, where there is not much seasonal variation attract more people. Areas with very heavy rainfall or extreme and harsh climates have low population. Mediterranean regions were inhabited from early periods in history due to their pleasant climate

84. Ans: a

Exp: The term population distribution refers to the way people are spaced over the earth's surface.

- Statement 1 is correct: Broadly, 90 per cent of the world population lives in about 10 per cent of its land area.
- Statement 2 is incorrect: The 10 most populous countries of the world contribute about 60 per cent of the world's population. Of these 10 countries, 6 are located in Asia.

85. Ans: d

Exp: India is a land of linguistic diversity. The speakers of major Indian languages belong to four language families namely Indo-European Family (Arya), Dravidian Family (Dravida), Austric Family (Nishada), and Sino-Tibetan Family (Kirata) Austric Languages: The Austric languages of India belong to the Austro-Asiatic sub-family.

- This category is further sub-divided into Munda and Mon-Khmer. Point 3 is correct:
- Munda or Kol Languages: Munda languages are the largest of the Austric group of languages. They consist of fourteen tribal languages.
- The Kherwari is the major group, which is current in Eastern India (Chota Nagpur, Orissa, Chhattisgarh and West Bengal) and includes Santhali, Mundari, Ho, Birhor, Bhumiej, Korwa and Korku (or Kurku). Santhali, Mundari, and Ho languages have a noteworthy literature preserved orally, consisting of songs and mythological romantic stories.
- Point 1 and 2 are correct: Mon-Khmer Languages: Mon-Khmer group of Austric languages has two sub-groups— Khasi and Nicobari.
- Khasi languages are spoken by Khasi tribal people of Meghalaya, while Nicobari languages are the languages of the tribal people of the Nicobar Islands.
- Khasi used to be written in Bengali-Assamese script about a century ago.
- Through the influence of Welsh Methodist missionaries, the Roman alphabet has

been adopted for Khasi and some literature has been produced.

- Hence Khasi, Mundari and Nicobari languages are part of Austric language family.

86. Ans: d

Exp: Petroleum refineries are located at the following places in India: Barauni, Koyali, Haldia, Mathura, Panipat, Digboi, Bongaigaon, Guwahati, Paradip, Mumbai, Visakhapatnam, Bathinda, Kochi, Chennai, Nagapattinam, Numaligarh, Tatipaka, Mangalore, and Jamnagar.

- Panipat, Digboi, Bongaigaon, Guwahati, Paradip, Mumbai, Visakhapatnam, Bathinda, Kochi, Chennai, Nagapattinam, Numaligarh, Tatipaka, Mangalore, and Jamnagar.

87. Ans: d

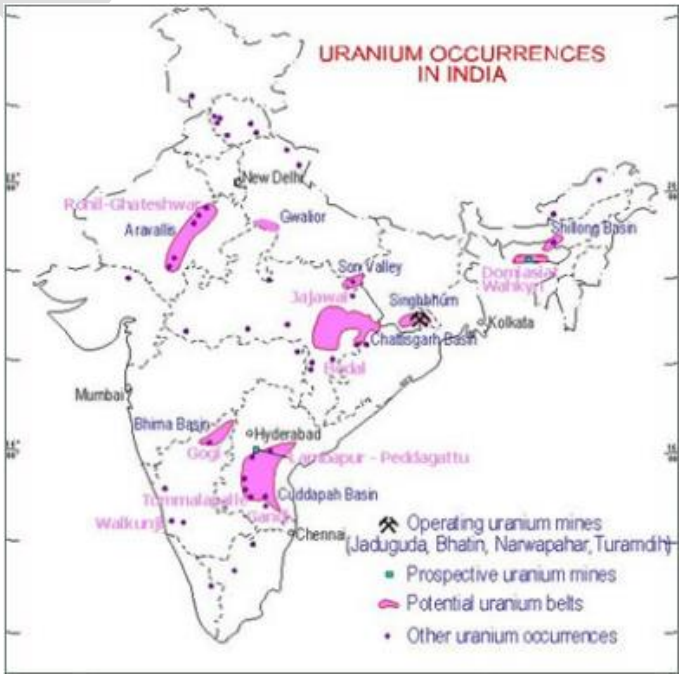
Exp: The Coal resources of India are available in older Gondwana Formations of peninsular India and younger Tertiary formations of north-eastern region.

- Over 97 per cent of coal reserves occur in the valleys of Damodar, Son, Mahanadi and Godavari. Theeastern belt is a major producer of coal.
- The energy derived from coal in India is about twice that of energy derived from oil, whereas worldwide, energy derived from coal is about 30% less than energy derived from oil.

88. Ans: d

Exp: In India, Uranium deposits occur in the Dharwar rocks.

- It occurs along the Singbhum Copper belt (Jharkhand);
- Udaipur, Alwar and Jhunjhunu districts of Rajasthan,
- Durg district of Chhattisgarh,
- Bhandara district of Maharashtra and
- Kullu district of Himachal Pradesh.
- Significant quantity of reserves was recently discovered in parts of Andhra Pradesh and Telangana between Seshachalam forest and Sresailam (Southern edge of Andhra to Southern edge of Telangana).
- Uranium is used as a fuel for nuclear power reactors for electricity generation, in the manufacture of radioisotopes for medical applications and in nuclear science research.



89. Ans: b

Exp: Statement 1 is not correct: Cotton is a tropical crop grown in the Kharif season in semi-arid areas of the country.

- India ranks second in the world in the production of cotton after China.
- Cotton occupies about 4.7 percent of the total cropped area in the country. There are three cotton-growing areas, i.e. parts of Punjab, Haryana and northern Rajasthan in the north- west, Gujarat and Maharashtra in the west and plateaus of Andhra Pradesh, Karnataka and Tamil Nadu in the south.
- Leading producers of this crop are Gujarat, Maharashtra and Telangana per hectare output of cotton is high under irrigated conditions in the north-western region of the country. Its yield is very low in Maharashtra where it is grown under rainfed conditions.
- Statement 2 is correct: The area under rice cultivation is the highest. Wheat is the second most important cereal crop in India after rice.
- India produces about 12.3 percent of the total wheat production of the world
- Statement 3 is correct: The oilseeds are produced for extracting edible oils.
- Drylands of Malwa plateau, Marathwada, Gujarat, Rajasthan, Telangana, Rayalseema region of Andhra Pradesh, and Karnataka plateau are oilseeds growing regions of India.
- These crops together occupy about 14 percent of the total cropped area in the country. Groundnut, rapeseed and mustard, soybean, and sunflower are the main oilseed crops grown in India.

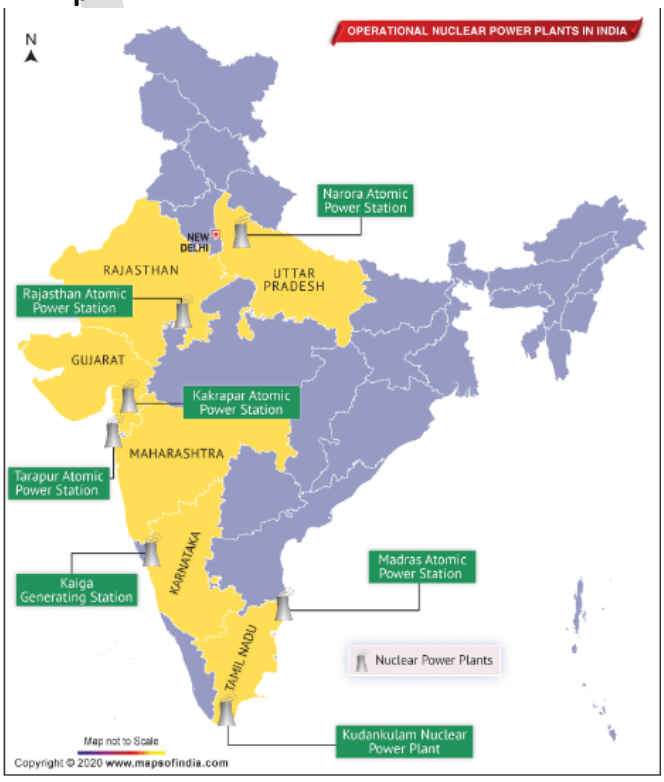
90. Ans: c

Exp: Shale gas & oil is defined as natural gas & oil from shale formations.

- Shale gas is an unconventional source of energy found in non-porous rocks. The shale acts as both the source and the reservoir for these unconventional hydrocarbons.
- Older shale wells were vertical while more recent wells are primarily horizontal and need artificial stimulation, like hydraulic fracturing, to produce.
- Only shale formations with certain characteristics will produce gas and oil.
- The country holds promising reserves of Shale Gas & Oil resources and the following sedimentary basins are considered prospective from Shale oil and gas point of view:
- cambay basin
- KG basin
- Cauvery basin
- Gondwana basin
- Indo-Gangetic baisn
- Assam-Arakan basin

91. Ans: b

Exp:



Map of India depicting location of 7 nuclear power plants in the country

92. Ans: d

Exp: Hindustan Aeronautics Limited (HAL) is an Indian state-owned aerospace and defence company headquartered in Bangalore (Bengaluru), India.

- It is governed under the management of the Indian Ministry of Defence.
- The government-owned corporation is primarily involved in the operations of the aerospace and is currently involved in the design, fabrication and assembly of aircraft, jet engines, helicopters and their spare parts.
- It has several facilities spread across India including Bangalore, Nasik, Korwa, Kanpur, Korap ut, Lucknow, Hyderabad, Barrackpore and Kasaragod.

93. Ans: b

Exp: Point 1 is correct: Monocropping is the agricultural practice of growing a single crop year after year on the same land, in the absence of rotation through other crops or growing multiple crops on the same land (polyculture).

- One of the serious problems that arises out of faulty strategy of irrigation and agricultural development is degradation of land resources.
- This is serious because it may lead to depletion of soil fertility. The situation is particularly alarming in irrigated areas.
- Point 2 is correct: Excessive use of chemicals such as insecticides and pesticides has led to their concentration in toxic amounts in the soil profile.
- Leguminous crops have been displaced from the cropping pattern in the irrigated areas and duration of fallow has substantially reduced owing to multiple cropping. This has obliterated the process of natural fertilisation such as nitrogen fixation.
- Point 3 is correct: A large tract of agricultural land has lost its fertility due to alkalisation and salinisation of soils and water logging.

94. Ans: d

Exp: Ports which are located far away from the sea coast and linked to the sea through a river or canal are known as 'Inland Ports'.

- Such ports are accessible to flat bottom ships or barges. For example, Manchester (England) is linked with a canal; Memphis (USA) is located on the river Mississippi; Rhine has several ports like Mannheim and Duisburg (both in Germany); and Kolkata (India) is located on the river Hooghly, a branch of the river Ganga.

List of inland port of India

- Varanasi Multi-Modal Terminal, Varanasi, Uttar Pradesh
- Farakka Port, Farakka, West Bengal
- Dhubri Port - Dhubri, Assam
- Kolkata Port, West Bengal
- Haldia Inland Port, Haldia, West Bengal
- Sahebganj Multi-Model Port, Sahebganj, Jharkhand
- Paradeep and kandla are not inland ports.

95. Ans: b

Exp: Pair 1 and 3 is not correctly matched:

- rabi crop: wheat, gram, rapseeds, musrard and barley Kharif crops: rice, cotton, bajra, maize, jowar, tur etc.
- Pair 3 is correctly matched: Zaid: vegetables, fruits and fodder.

Cropping Season	Major Crops Cultivated	
	Northern States	Southern States
Kharif June-September	Rice, Cotton, Bajra, Maize, Jowar, Tur	Rice, Maize, Ragi, Jowar, Groundnut
Rabi October – March	Wheat, Gram, Rapeseeds and Mustard, Barley	Rice, Maize, Ragi, Groundnut, Jowar
Zaid April–June	Vegetables, Fruits, Fodder	Rice, Vegetables, Fodder

96. Ans: c

Exp: Economist Dr Mahbub-ul-Haq created

the Human Development Index in 1990.

- According to him, development is all about enlarging people's choices in order to lead long, healthy lives with dignity. The United Nations Development Programme has used his concept of human development to publish the Human Development Report annually since 1990.
- The human development index (HDI) ranks the countries based on their performance in the key areas of health, education and access to resources. These rankings are based on a score between 0 to 1 that a country earns from its record in the key areas of human development.
- From 2010 onwards the Human Development Index (HDI) combines three dimensions:
- A long and healthy life: Life expectancy at birth
- Education Index- Mean years of schooling and Expected years of schooling
- A decent standard of living: GNI per capita (PPP US$)

97. Ans: b

Exp: There are three distinct crop seasons in the northern and interior parts of country, namely kharif, rabi and zaid.

- Statement 1 is not correct. The kharif season largely coincides with Southwest Monsoon under which the tropical crops are cultivated.
- Statement 2 is correct: The Rabi season begins with the onset of winter in October-November and ends in March-April. The low temperature conditions during this season facilitate the cultivation of temperate and subtropical crops.
- Statement 3 is correct: Zaid is a short duration summer cropping season beginning after harvesting of Rabi crops.

98. Ans: c

Exp: Statement 1 is correct: its cultivation in India is done during winter i.e. Rabi season.

- Statement 2 is not correct: Wheat is primarily a crop of temperate zone.
- Being a Rabi crop, it is mostly grown under irrigated conditions. But it is a rainfed crop in Himalayan highlands and parts of Malwa plateau in Madhya Pradesh.
- Statement 3 is not correct: Pulses, the leguminous crops increase the natural fertility of soils through nitrogen fixation and not the wheat.

99. Ans: d

Exp: Option d is correct

- Warabandi system of water distribution is followed for canal irrigation system at many parts of India.
- It is observed that tail end fields receive less amount of water compared to fields situated at or near the head of water courses.
- This is because of seepage losses in unlined water courses.
- Warabandi is a rotational method for equitable distribution of the available water in an irrigation system by turns fixed according to a predetermined schedule specifying year, day, time and duration of supply to each irrigator in proportion to the size of his landholding.

100. Ans: c

Exp: The economic activities in Steppe type of grassland can be explained as below:

- Point 1 is not correct: Nomadic herding: This type of migratory animal grazing has almost disappeared from major grasslands.
- Point 2 is correct: Pastoral farming: With the development of refrigerated ships the temperate grasslands became major pastoral regions.
- Point 3 is correct: Extensive mechanized wheat cultivation: Temperate grasslands are ideal for extensive wheat cultivation.