

KENDRIYA VIDYALAYA SANGATHAN
(AGRA REGION)
SESSION ENDING EXAMINATION 2018-19
CLASS – XI
SUBJECT - GEOGRAPHY (THEORY)
(SOLVED PAPER)

Time: 3 Hrs.

M.M.: 70

General Instructions:

1. There are 22 questions in all. All questions are compulsory.
2. Marks of each question are indicated against it.
3. Question no 1 to 7 are very short answer type questions. Answer to each of these questions should not exceed 20 words.
4. Question no 8 to 13 are short answer type questions. Answer to each of these questions should not exceed 80 words.
5. Question no 14 to 20 are long answer type questions. Answer to each of these questions should not exceed 150 words.
6. Question no 21 to 22 are related to the map of the world and India for identification and location respectively.
7. The Outline maps provided to you must be attached with in your answer-book.
8. Use of templates or stencils for drawing outline map is allowed.

Section A

1. Which gas is transparent to incoming solar radiation and opaque to outgoing terrestrial radiation? 1
Or
Define the term "relative humidity".
2. What is thermocline? 1
3. What are the major types of ecosystem? 1
Or
How a food chain is differing from a food web?
4. Differentiate between a Gulf and a Strait. 1
5. What are the elements of weather and climate? 1
6. What is the main reason for the loss of the top soil in India? 1
Or
What is the another name of black soil?
7. When can a hazard become a disaster? 1

Section B

8. How does Physical Geography affect the human life? 3
9. What are the general characteristics of Isotherms? 3
Or
What are the forces responsible for the direction and velocity of winds?
10. Study the given data carefully and answer the following questions. 3

Temperature data forAgra, India 2018												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temp. °C	10.0	12.6	34.2	37.5	48.6	48.5	48.5	40.0	32.4	30.1	23 1	00

- 10.1 Which is the coldest and hottest month of the given place?
- 10.2 What is the annual temperature range of the given place?
- 10.3 What is the mean annual temperature of the given place?

For visually impaired candidates (in place of Q. 10)

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- 10.1. What is the annual temperature range?
 10.1. How can you calculate the mean annual temperature?
 10.2. Which place received highest rainfall in the world?
 11. What are the major factors that are responsible for the loss of biodiversity? 3
 12. Does India need to have more than one standard time? If yes, Why do you think so? 3

Or

What are the implications of India having a long coastline?

13. What are tides? How are tides caused? 3

Section C

14. How many planets are in our solar system? What are the categories of these planets? Differentiate between them? 5

Or

What are the major types of plate boundaries? Explain.

15. "Our earth is a play field for two opposing groups of geomorphic processes. Discuss. 5

Or

How does wind perform its task in desert areas? Explain some erosional and depositional features of deserts?

16. What is a cyclone? Differentiate between tropical cyclones and extra tropical cyclones. 5

Or

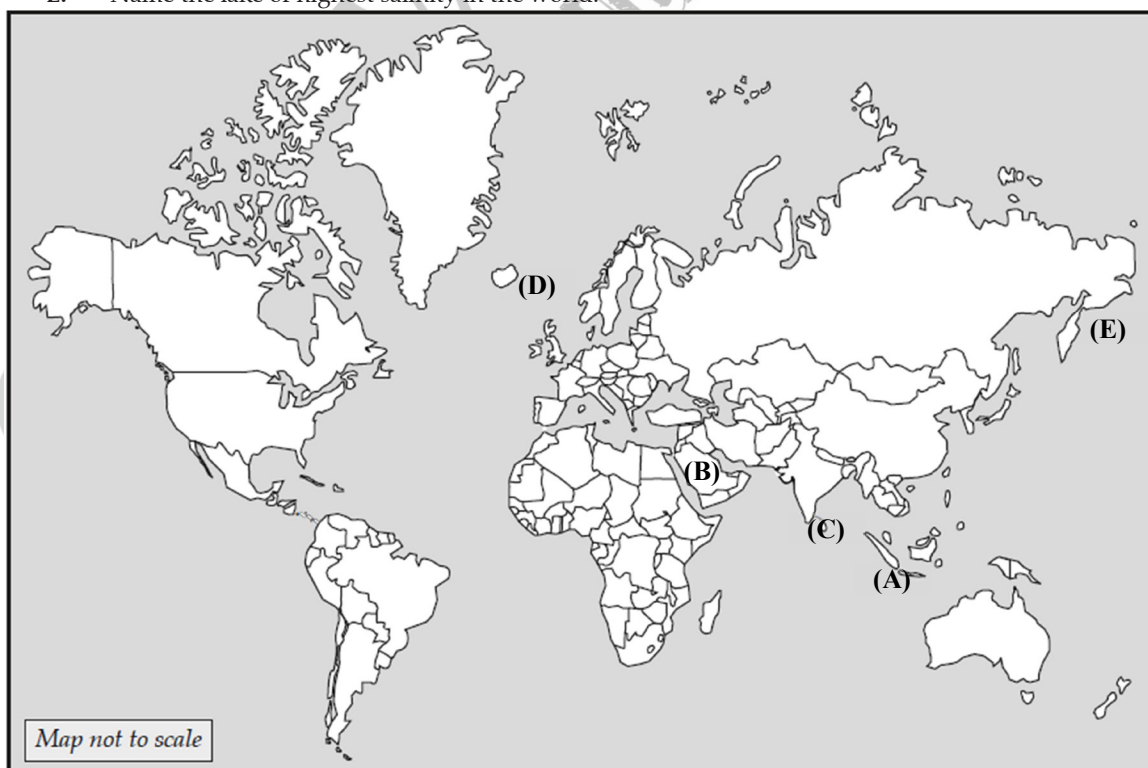
Explain the classification of world climate suggested by Koeppen.

17. Name the major physical division of India. Explain any one of them. 5
 18. How are Himalayan rivers different from peninsular rivers? 5
 19. How can People's participation be effective in conserving forest and wild life? 5
 20. What is vulnerability? Divide India into natural disaster vulnerability zone based on droughts. 5
 21. On the given political map of world, five features have been marked as A, B, C, D and E, identity these features with the help of information given below and write their correct names on the lines drawn near them. 5

- A. A trench.
 B. A plate.
 C. An ecological hot spot.
 D. A warm ocean current
 E. A cold ocean current

For visually impaired candidates (in place of Q.21)

- A. Name the largest tectonic plate.
 B. How many biodiversity hotspots in the world?
 C. Name any one biodiversity hotspots in India.
 D. Name any one cold water current of Atlantic Ocean.
 E. Name the lake of highest salinity in the world.

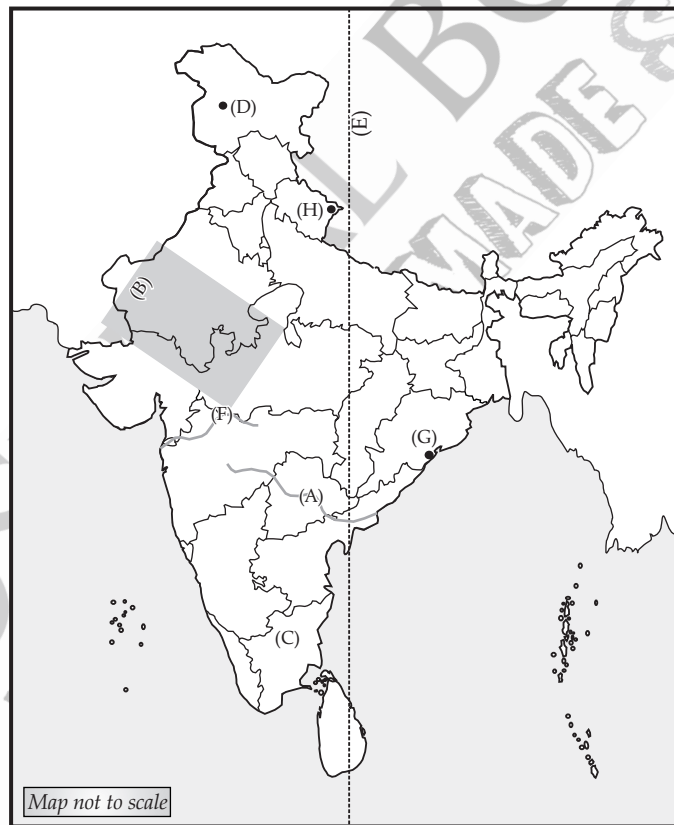


22. Locate and label any five of following on the given outline political map of India with appropriate symbols. 5

- A. Godavari river.
- B. Aravalli mountain.
- C. An important area of winter rainfall in south India.
- D. Dachigam National Park.
- E. Standard Meridian of India.
- F. Tapi river
- G. Mahendragiri
- H. Nanda Devi

For visually impaired candidates (in place of Q.22) (Attempt any five)

- A. Which river is known as Dakshin Ganga
- B. Name the oldest mountain range in India.
- C. Name the areas which receive rainfall in winter.
- D. Name any one national park of M.P.



ANSWERS

Section A

1. Carbon dioxide.

OR

The amount of water vapor in the air at any given time is usually less than that required to saturate the air.

2. A thermocline is the transition layer between the warmer mixed water at the surface of the ocean and the cooler deep water below.
3. The major types of ecosystems are Terrestrial (sub-divided as forests, grasslands, deserts and tundra) and Aquatic (sub-divided as fresh water and marine).

OR

Food chain is the increase in trophic level and transfer of energy through each level. And there are different types of food chains like terrestrial food chain and detritus food chain.

Food web is actually made of several food chains. One food chain gets connected to other food chain in a food web.

4. A gulf is a deep inlet of a sea almost surrounded by land, with a narrow mouth. Example – Gulf of Khambat.

A strait is a narrow passage of water connecting two large water bodies like seas and oceans. Example – Palk Strait.

5. The elements of climate and weather are precipitation, evaporation, pressure, solar radiation, humidity, wind speed, wind direction, etc.
6. The main reason for erosion of top soil in India is water erosion.

OR

The other name of black soil is regur soil.

7. A hazard can become a disaster when the magnitude of destruction and damage caused by it is very high.

Section B

8. Physical geography is the study of natural features and phenomena on the planet's surface and our interactions with them. These features include vegetation, climate, the local water cycle, and land formations. Geography doesn't just determine whether humans can live in a certain area or not, it also determines people's lifestyles, as they adapt to the available food and climate patterns. As humans have migrated across the planet, they have had to adapt to all the changing conditions they were exposed to.
9. The Isotherms are lines joining places having equal temperature. The temperature distribution is generally shown on the map with the help of isotherms.

OR

Factors affecting the velocity and direction of wind are:

- (a) **Pressure Gradient Force** - The pressure gradient is strong where the isobars are close to each other and is weak where the isobars are apart.
- (b) **Frictional Force** - It is greatest at the surface and its influence generally extends upto an elevation of 1 - 3 km. Over the sea surface the friction is minimal.
- (c) **Coriolis Force** - The rotation of the earth about its axis affects the direction of the wind. This force is called the Coriolis force after the French physicist who described it in 1844. It deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere. The deflection is more when the wind velocity is high.

10.

- 1.1 The coldest month is December and the hottest month is May.

- 1.2 Annual temperature range = Maximum Temperature – Minimum Temperature = $48.6 - 0 = 48.6$.

- 1.3 Mean Annual range of temperature = $10 + 12.6 + 34.2 + 37.5 + 48.6 + 48.5 + 48.5 + 40 + 32.4 + 30.1 + 23.1 + 0.12 = 30.45^\circ\text{C}$

11. Major factors that are responsible for the loss of biodiversity:

- (a) Overexploitation of resources and deforestation have become rampant to fulfill the needs of large population. As these tropical rain forests contain 50 per cent of the species on the earth, destruction of natural habitats have proved disastrous for the entire biosphere.
- (b) Natural calamities such as earthquakes, floods, volcanic eruptions, forest fires, droughts, etc. cause damage to the flora and fauna of the earth, bringing change the biodiversity of respective affected regions.
- (c) Pesticides and other pollutants such as hydrocarbons and toxic heavy metals destroy the weak and sensitive species.

12. In my point of view, I think Indian needs to have more than one standard time because India has a large longitudinal extent of about 30° .

- (a) When the sun is still shining in western coast it is already night in northeast so we need two or more time zones to clearly reflect day to day changes.
- (b) Time variation of 2 hours between Easternmost & the westernmost parts of our country. The sun rises two hours earlier in Arunachal Pradesh as compared to Gujarat because the earth is tilted and also it rotates in East to West direction so during rotation the Eastern part of the world experiences

that sun rays earlier as compared to the western parts of the world.

- (c) Other countries like USA, Canada & Russia have more than one standard time because their longitudinal extent is large. India longitudinal extent is also 30°. Therefore it is advisable to use more than one Standard Time.

OR

India's coastline is roughly 7,500 km with Arabian Sea on the West and Bay of Bengal in the East. Indian subcontinent lies in the Indian Ocean region. This geography provides India with huge advantages. Some of them are:

- (a) **Maritime Trade** - This vast coastline and access to Indian Ocean allows India to trade with the most parts of the World. Arabian Sea gives it access to gulf countries which are major oil exporters. The Andaman Sea gives it access to Malacca Strait and then to South China sea. For this reason India has been a maritime nation since ancient past. It was a global trade center for spices and textile.
 - (b) **Tourism** - A long coastline implies good tourism potential for several states of India like Goa, Kerala and Tamil Nadu. A variety of beaches are found in India.
 - (c) **Cheap Transport** - Sea transport is cheaper than land transport and this implies low cost of imports and exports.
 - (d) **Monsoon** - The South West monsoon from Indian ocean brings good amount of rainfall to India. The agriculture thrives due to good rainfall.
 - (e) **Safety and Security** - The Sea borders are considered safer than land borders. There is no need for fencing like in case of land borders to check infiltration. Indian Coast Guard (ICG) protects India's maritime interests.
 - (f) **Climate** - The long coastline results in pleasant maritime climate near the coastal areas.
 - (g) **Resources** - India is heavily dependent on Indian Ocean for it's resources. India's fishing industry is one of the largest in the World. Mineral resources extraction is also important. India has exclusive rights to explore Central Indian Ocean.
13. Tides are periodic rises and falls of large bodies of water. Tides are caused by the gravitational interaction between the Earth and the Moon. The gravitational attraction of the moon causes the oceans to bulge out in the direction of the moon. Another bulge occurs on the opposite side, since the Earth is also being pulled toward the moon (and away from the water on the far side). Since the earth is rotating while this is happening, two tides occur each day.

Section C

14. There are eight planets in our solar system – Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto. Out of the eight planets, Mercury, Venus, Earth and Mars are called as the inner planets as they lie between the sun and the belt of asteroids the other four planets are called the outer planets. Alternatively, the first four are called Terrestrial, meaning earth-like as they are made up of rock and metals, and have relatively high densities. The rest four are called Jovian or Gas Giant planets. Jovian means Jupiter-like. Most of them are much larger than the terrestrial planets and have thick atmosphere, mostly of helium and hydrogen.

The difference between terrestrial and jovian planets can be attributed to the following conditions:

- (a) The terrestrial planets were formed in the close vicinity of the parent star where it was too warm for gases to condense to solid particles. Jovian planets were formed at quite a distant location.
- (b) The solar wind was most intense nearer the sun; so, it blew off lots of gas and dust from the terrestrial planets. The solar winds were not all that intense to cause similar removal of gases from the Jovian planets.
- (c) The terrestrial planets are smaller and their lower gravity could not hold the escaping gases.

OR

There are three types of plate boundaries:

- (a) **Divergent Boundaries** - Where new crust is generated as the plates pull away from each other. The sites where the plates move away from each other are called spreading sites. The best-known example of divergent boundaries is the Mid-Atlantic Ridge. At this, the American Plate(s) is/are separated from the Eurasian and African Plates.
- (b) **Convergent Boundaries** - Where the crust is destroyed as one plate dived under another. The location where sinking of a plate occurs is called a subduction zone. There are three ways in which convergence can occur. These are:
 - (i) between an oceanic and continental plate;
 - (ii) between two oceanic plates; and
 - (iii) between two continental plates.
- (c) **Transform Boundaries** - Where the crust is neither produced nor destroyed as the plates slide horizontally past each other. Transform faults are the planes of separation generally perpendicular to the mid-oceanic ridges. As the eruptions do not take all along the entire crest at the same time, there is a differential movement of a portion of the plate away

from the axis of the earth. Also, the rotation of the earth has its effect on the separated blocks of the plate portions.

15. It is correct to say that our earth is a playfield for two opposing groups of geomorphic processes.

- (a) We know that the earth's crust is dynamic and it moves vertically and horizontally. The internal forces of the earth operating within the earth which build up the crust have also been responsible for the variation in the outer surface of the crust.
- (b) The external forces are involved to degrade the landforms built up by the internal forces. The action of the exogenic forces results in wearing down of relief of elevation and filling up of basins on the earth's surface.
- (c) The endogenic forces continuously elevate or build up parts of the earth's surface and hence the exogenic processes fail to even out the relief variations of the surface of the earth.
- (d) Thus variation remains as long as the opposing actions of exogenic and endogenic forces continue. So in this way our earth is a playfield for two opposing groups of processes.

OR

The wind causes the evolution of various landforms on the earth's surface. The wind is the main geomorphic agent in the hot deserts. Winds in hot deserts have greater speed which causes erosional and depositional activities in the desert. The landforms which are created by erosional and depositional activities of wind are called as Aeolian Landforms.

- (a) Erosional Landforms due to Wind
 - (i) **Pediaplays** - When the high relief structures in deserts are reduced to low featureless plains by the activities of wind, they are called as Pediplains.
 - (ii) **Deflation Hollows** - Deflation is the removal of loose particles from the ground by the action of wind. When deflation causes a shallow depression by persistent movements of wind, they are called as deflation hollows.
 - (iii) **Mushroom Tables** - Ventifacts are rocks that have been abraded, pitted, etched, grooved, or polished by wind-driven sand or ice crystals. These geomorphic features are most typically found in arid environments where there is little vegetation to interfere with aeolian particle transport, where there are frequently strong winds, and where there is a steady but not overwhelming supply of sand. Mushroom Tables / Mushroom rocks are Ventifacts in the shape of a mushroom. In deserts, a greater amount of sand and rock

particles are transported close to the ground by the winds which cause more bottom erosion in overlying rocks than the top. This results in the formation of rock pillars shaped like a mushroom with narrow pillars with broad top surfaces.

(b) Depositional Landforms of Wind

- (i) **Sand dunes** - Dry hot deserts are good places for sand dune formation. According to the shape of a sand dune, there are varieties of sand dune forms like Barchans, Seifs etc.
 - (ii) **Loess** - In several large areas of the world, the surface is covered by deposits of wind-transported silt that has settled out from dust storms over many thousands of years. These depositions are called as Loess.
16. Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large scale destruction caused by violent winds, very heavy rainfall and storm surges. This is one of the most devastating natural calamities. They are known as Cyclones in the Indian Ocean, Hurricanes in the Atlantic, Typhoons in the Western Pacific and South China Sea, and Willy-willies in the Western Australia.

The extra tropical cyclone differs from the tropical cyclone in number of ways. The extra tropical cyclones have a clear frontal system which is not present in the tropical cyclones. They cover a larger area and can originate over the land and sea. Whereas the tropical cyclones originate only over the seas and on reaching the land they dissipate. The extra tropical cyclone affects a much larger area as compared to the tropical cyclone. The wind velocity in a tropical cyclone is much higher and it is more destructive. The extra tropical cyclones move from west to east but tropical cyclones, move from east to west.

OR

The Koeppen Climate Classification System is the most widely used system for classifying the world's climates. Its categories are based on the annual and monthly averages of temperature and precipitation. The Koeppen system recognizes five major climatic types; each type is designated by a capital letter.

- (a) **Tropical Moist Climates (A)** - Tropical moist climates extend northward and southward from the equator to about 15 to 25° of latitude. In these climates all months have average temperatures greater than 18° Celsius. Annual precipitation is greater than 1500 mm. Three minor Köppen climate types exist in the A group, and their designation is based on seasonal distribution of rainfall. Af or tropical wet is a tropical climate where precipitation occurs all year long. Monthly temperature variations in this climate are less than 3° Celsius. Because of intense

surface heating and high humidity, cumulus and cumulonimbus clouds form early in the afternoons almost every day. Daily highs are about 32° Celsius, while night time temperatures average 22° Celsius. Am is a tropical monsoon climate. Annual rainfall is equal to or greater than Af, but most of the precipitation falls in the 7 to 9 hottest months. During the dry season very little rainfall occurs. The tropical wet and dry or savanna (Aw) has an extended dry season during winter. Precipitation during the wet season is usually less than 1000 millimeters, and only during the summer season.

- (b) **Dry Climates (B)** - The most obvious climatic feature of this climate is that potential evaporation and transpiration exceed precipitation. These climates extend from 20° - 35° North and South of the equator and in large continental regions of the mid-latitudes often surrounded by mountains. Minor types of this climate include:

- (i) **BW** - dry arid (desert) is a true desert climate. It covers 12% of the Earth's land surface and is dominated by xerophytic vegetation. The additional letters h and k are used generally to distinguish whether the dry arid climate is found in the subtropics or in the mid-latitudes, respectively.
- (ii) **BS** - dry semiarid (steppe). Is a grassland climate that covers 14% of the Earth's land surface. It receives more precipitation than the BW either from the intertropical convergence zone or from mid-latitude cyclones. Once again, the additional letters h and k are used generally to distinguish whether the dry semiarid climate is found in the subtropics or in the mid-latitudes, respectively.

- (c) **Moist Subtropical Mid-Latitude Climates (C)** - This climate generally has warm and humid summers with mild winters. Its extent is from 30 to 50° of latitude mainly on the eastern and western borders of most continents. During the winter, the main weather feature is the mid-latitude cyclone. Convective thunderstorms dominate summer months. Three minor types exist: Cfa - humid subtropical; Cs - Mediterranean; and Cfb - marine. The humid subtropical climate (Cfa) has hot muggy summers and frequent thunderstorms. Winters are mild and precipitation during this season comes from mid-latitude cyclones. A good example of a Cfa climate is the southeastern USA. Cfb marine climates are found on the western coasts of continents. They have

a humid climate with short dry summer. Heavy precipitation occurs during the mild winters because of the continuous presence of mid-latitude cyclones. Mediterranean climates (Cs) receive rain primarily during winter season from the mid-latitude cyclone. Extreme summer aridity is caused by the sinking air of the subtropical highs and may exist for up to 5 months. Locations in North America are from Portland, Oregon to all of California.

- (d) **Moist Continental Mid-latitude Climates (D)** - Moist continental mid-latitude climates have warm to cool summers and cold winters. The location of these climates is pole ward of the C climates. The average temperature of the warmest month is greater than 10° Celsius, while the coldest month is less than -3° Celsius. Winters are severe with snowstorms, strong winds, and bitter cold from Continental Polar or Arctic air masses. Like the C climates there are three minor types: Dw - dry winters; Ds - dry summers; and Df - wet all seasons.
- (e) **Polar Climates (E)** - Polar climates have year-round cold temperatures with the warmest month less than 10° Celsius. Polar climates are found on the northern coastal areas of North America, Europe, Asia, and on the landmasses of Greenland and Antarctica. Two minor climate types exist. ET or polar tundra is a climate where the soil is permanently frozen to depths of hundreds of meters, a condition known as permafrost. Vegetation is dominated by mosses, lichens, dwarf trees and scattered woody shrubs. EF or polar ice caps has a surface that is permanently covered with snow and ice.

17. India is divided into six natural regions:

- (a) The Great Himalayas
- (b) The northern plains
- (c) The desert region
- (d) The southern plateau
- (e) The coastal plains
- (f) The island region

The Great Himalayas owing to the location are said to be guarding our country. The Himalayas include three main parallel ranges:

- (i) The northern-most range is the Himadri. This range forms the backbone of the Himalayas. It contains nine of the fourteen highest peaks in the world.
- (ii) The middle range is the Himachal, also called the Lower Himalayas.
- (iii) The southern-most is the narrowest range, the Shivalik range.

18. Some of the key differences between the Himalayan Rivers and the Peninsular Rivers are as follows:

Himalayan Rivers	Peninsular Rivers
These rivers originate from the Himalayan mountain ranges.	These rivers originate from the peninsular plateaus in India.
They are longer and larger than the peninsular rivers.	They are comparatively smaller and shorter than the Himalayan Rivers.
They have larger basins and catchment areas.	They have smaller basins and catchment areas.
The bedrocks of these rivers are soft, sedimentary and easily erodible.	The bedrocks of these rivers are hard, and not easily erodible.
They are perennial in nature, flow throughout the year.	They are seasonal and non-perennial so may not flow throughout the year.
They are fed by the meltwater from glaciers and rains.	They are fed only by rains.
They form V-shaped valleys.	They form U-shaped valleys.
They form meanders.	They may not form meanders.
They form big deltas at their mouths where they meet the sea.	They form small rivers and estuaries.
They are antecedent rivers, i.e. they maintain their original course and pattern in spite of the changes in the rock topography.	They are consequent rivers, i.e. they flow in the direction of the slope.

19. The participation of people is crucial to the goal of effective conservation and management of forests and wildlife. This can be ensured in following ways:-

(a) **Joint Forests Management:** Through this, forests and local communities jointly manage forests and share responsibilities and user rights. Under JVM, the legal ownership remains with the government forest department and local village communities co-manages the forests and are entitled to share in forests products. This increases people's stake in protection of forests resources since they are directly dependent on forests products for their livelihood and they would like to conserve them so that they can continue reaping benefits out of the forests resources for long time. This initiative has proved to be a huge success in India in forest management and conservation efforts ever since its inception in the 1990s.

(b) **Holding regular meeting and exchange of information between the local communities and the forests officials:** This is important because-

- (i) to exchange information about the progress of forest conservation initiatives, and the condition of forests resources
- (ii) report of any illegal activities like poaching, smuggling and cutting of woods.
- (iii) decimate information and make communities aware about new and improved techniques for forest conservation.
- (iv) briefing of future plans and initiatives.

(c) **Incentives for people involved in conservation efforts :** There should be incentives for people achieving extra success in their conservation efforts by rewarding them with prize money or through permanent jobs for one or more member of their family in the forest department along with other suitable recognitions in order to boost their enthusiasm and encourage others to do the same.

(d) **Participation of NGOs and expert bodies in forestry :**

- (i) to train and enhance the skills of people in conserving forests;
- (ii) to inform them about the benefits and role of forests in our life;
- (iii) mobilize the support of local population in conservation efforts.

20. Vulnerability is the human dimension of disasters and is the result of the range of economic, social, cultural, institutional, political and psychological factors that shape people's lives and the environment that they live in.

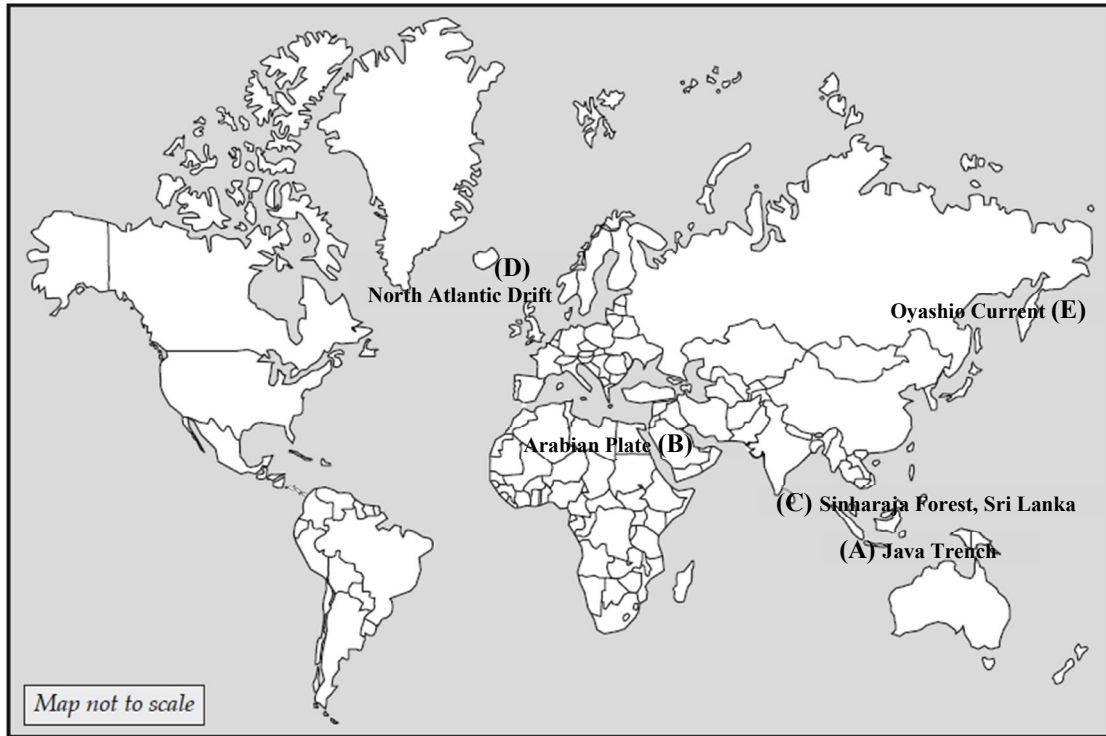
Drought refers to the situation of less moisture in the soil (which makes the land unproductive) and scarcity of water for drinking, irrigation, industrial uses and other purposes, usually caused by deficient/less than average rainfall over a long period of time. Some states of India feature the perennial drought such as Rajasthan, Odisha, Gujarat, Madhya Pradesh etc. Sixteen percent of the country's total area is drought-prone and approximately 50 million people are affected annually by droughts. In India about 68 percent

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of net sown area in the country is drought-prone. Most of the drought-prone areas identified by the Government of India lie in arid, semi-arid and sub-

humid areas of the country. In the arid and semi-arid zones, very severe droughts occur once in every eight to nine years.

21.



22.

