



FACT SHEET PREP SERIES

Part - 1

ANSWER KEY WITH EXPLANATION GEOGRAPHY & ENV.

1. Ans. d

Explan - The presence of the high-pressure area, east of Madagascar, approximately at 20° S over the Indian Ocean. The intensity and position of this high-pressure area affects the Indian Monsoon. The differential heating and cooling of land and water creates low pressure on the landmass of India while the seas around experience comparatively high pressure.

2. Ans. c

Explan - There are **two types of body waves-P waves and S waves**. The first kind of body wave is the P wave or primary wave. This is the fastest kind of seismic wave and consequently, the first to 'arrive' at a seismic station. The P wave can move through solid rock and fluids, like water or the liquid layers of the earth. It pushes and pulls the rock it moves through just like sound waves push and pull the air. Have you ever heard a big clap of thunder and heard the windows rattle at the same time? The windows rattle because the sound waves were pushing and pulling on the window glass much like P waves push and pull on rock. Sometimes animals can hear the P waves of an earthquake. Dogs, for instance, commonly begin barking hysterically just before an earthquake 'hits' (or more specifically, before the surface waves arrive). Usually people can only feel the bump and rattle of these waves.

P waves are also known as compressional waves, because of the pushing and pulling they do. Subjected to a P wave, particles move in the same direction that

the wave is moving in, which is the direction that the energy is travelling in, and is sometimes called the 'direction of wave propagation'.

3. Ans. c

Explan - The peninsular region does not have a well-defined cold season. There is hardly any noticeable seasonal change in temperature pattern during winters due to the moderating influence of the sea.

4. Ans. a

Explan - The material in the upper mantle portion is called magma. Once it starts moving towards the crust or it reaches the surface, it is referred to as lava.

The layer below the solid crust is mantle. It has higher density than that of the crust. The mantle contains a weaker zone called asthenosphere. It is from this that the molten rock materials find their way to the surface.

5. Ans. c

Explan - In areas where temperature is high the air gets heated and rises. This creates a low-pressure area. Low pressure is associated with cloudy skies and wet weather. In areas having lower temperature, the air is cold. It is therefore heavy. Heavy air sinks and creates a high pressure area. High pressure is associated with clear and sunny skies.

6. Ans. a

Explan - It is also aimed for the consumers to make an environmental - friendly product choice, and also to consider the relation of life and environment. The



Ministry of Environment & Forests, Government of India have instituted a scheme on labeling of Environment Friendly Products through Gazette Notification No. 71 dated 21st February 1991. The scheme is operating on a national basis and provides accreditation and labeling for household and other consumer products which meet certain environmental criteria along with quality requirements of the Indian Standards for that product.

The Scheme is known as "ECOMARK". Any product which is made, used or disposed of in a way that significantly reduces the harm it would otherwise cause to the environment, are categorized as environment friendly product. The scheme is voluntary and invites participation from common citizens and concerned industrial sectors in the larger interest of environment.

Objectives

To provide an incentive for manufacturers and importers to reduce environmental impact of products. To reward genuine initiatives by companies to reduce adverse environmental impact of their products. To assist consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions. To ensure citizens to purchase products which have less harmful environmental impacts? Ultimately to improve the quality of the environment and to encourage the sustainable management of resources.

7. Ans. a

Explan - Tropical thorn forests occur in the areas which receive rainfall less than 50 cm. These consist of a variety of grasses and shrubs. It includes semi-arid areas of south west Punjab, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Uttar Pradesh. In these forests, plants remain leafless for most part of the year and give an expression of scrub vegetation. Important species found are babool, ber, and wild date palm, khair, neem, khejri, palas, etc. Tussocky grass grows upto a height of 2 m as the under growth.

8. Ans. c

Related Information - There are several ways of removing particulate matter; the most widely used of which is the electrostatic precipitator, which can remove over 99 per cent particulate matter present in the exhaust from a thermal power plant. It has electrode wires that are maintained at several thousand volts, which produce a corona that releases electrons. These electrons attach to dust particles giving them a net negative charge. The collecting plates are grounded and attract the charged dust particles. The velocity of air between the plates must be low enough to allow the dust to fall. A scrubber can remove gases like sulphur dioxide. In a scrubber,

the exhaust is passed through a spray of water or lime. Recently we have realised the dangers of particulate matter that are very small and are not removed by these precipitators.

9. Ans. b

Related Information - North America is the third largest continent of the world. It is linked to South America by a very narrow strip of land called the Isthmus of Panama. The continent lies completely in the Northern and Western Hemisphere. Three oceans surround this Continent.

10. Ans. c

Extra Information - A mineral is a naturally occurring organic and inorganic substance, having an orderly atomic structure and a definite chemical composition and physical properties. A mineral is composed of two or more elements. But, sometimes single element minerals like sulphur, copper, silver, gold, graphite etc. are found.

11. Ans. c

Related Information - Shifting cultivation is **also known as 'slash and burn' agriculture**. It is practised in the thickly forested areas of Amazon basin, tropical Africa, parts of Southeast Asia and Northeast India. These are the areas of heavy rainfall and quick regeneration of vegetation. A plot of land is cleared by felling the trees and burning them. The ashes are then mixed with the soil and crops like maize, yam, potatoes and cassava are grown. After the soil loses its fertility, the land is abandoned and the cultivator moves to a new plot.

12. Ans. d

Explan - The enclosed seas in the low latitudes record relatively high temperature than the open seas; whereas the enclosed seas in the high latitudes have low temperature than the open seas.

13. Ans. a

Explan - Indira Gandhi Canal, previously known as the Rajasthan Canal, is one of the largest canal systems in India. Conceived by Kanwar Sain in 1948, the canal project was launched on 31 March, 1958. The canal originates at Harike barrage in Punjab and runs parallel to Pakistan border at an average distance of 40 km in Thar Desert (Marusthali) of Rajasthan. The total planned length of the system is 9,060 km catering to the irrigation needs of a total culturable command area of 19.63 lakh hectares. Out of the total command area, about 70 per cent was envisaged to be irrigated by flow system and the rest by lift system.



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14. Ans. a

Extra Information - Organisms occupy a place in the natural surroundings or in a community according to their feeding relationship with other organisms. Based on the source of their nutrition or food, organisms occupy a specific place in the food chain that is known as their trophic level. Producers belong to the first trophic level, herbivores (primary consumer) to the second and carnivores (secondary consumer) to the third. The important point to note is that the amount of energy decreases at successive trophic levels. When any organism dies it is converted to detritus or dead biomass that serves as an energy source for decomposers. Organisms at each trophic level depend on those at the lower trophic level for their energy demands.

15. Ans. a

Explan - Domestic sewage, the most common source of pollution of water bodies, reduces dissolved oxygen but increases biochemical oxygen demand of receiving water. Domestic sewage is rich in nutrients, especially, nitrogen and phosphorus, which cause eutrophication and nuisance algal blooms. Industrial waste waters are often rich in toxic chemicals, especially heavy metals and organic compounds. Industrial waste waters harm living organisms. Municipal solid wastes also create problems and must be disposed of in landfills.

16. Ans. c

Explan - It may be seen the beautiful mauve-colored flowers found on very appealingly-shaped floating plants in water bodies. These plants which were introduced into India for their lovely flowers have caused havoc by their excessive growth by causing blocks in our waterways. They grow faster than our ability to remove them. These are plants of water hyacinth (*Eichhornia crassipes*), the world's most problematic aquatic weed, also called 'Terror of Bengal'. Sewage from our homes as well from hospitals are likely to contain many undesirable pathogenic microorganisms, and its disposal into a water without proper treatment may cause outbreak of serious diseases, such as, dysentery, typhoid, jaundice, cholera, etc. Unlike domestic sewage, waste water from industries like petroleum, paper manufacturing, metal extraction and processing, chemical manufacturing, etc., often contain toxic substances, notably, heavy metals (defined as elements with density > 5 g/cm³ such as mercury, cadmium, copper, lead, etc.) and a variety of organic compounds.

17. Ans. a

Related Information - Haryali is a watershed development project sponsored by the Central Government which aims at enabling the rural population

to conserve water for drinking, irrigation, fisheries and afforestation. The Project is being executed by Gram Panchayats with people's participation.

18. Ans. c

Explan - 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.

19. Ans. c

Explan - **Stalactites hang as icicles of different diameters.** Normally they are **broad at their bases and taper towards the free ends** showing up in a variety of forms. **Stalagmites rise up from the floor of the caves.** In fact, stalagmites form due to dripping water from the surface or through the thin pipe, of the stalactite, immediately below it. Stalagmites may take the shape of a column, a disc, with either a smooth, rounded bulging end or a miniature crater like depression. **The stalagmite and stalactites eventually fuse to give rise to columns and pillars of different diameters.**

20. Ans. a

Explan - Convective Rain - The, air on being heated, becomes light and rises up in convection currents. As it rises, it expands and loses heat and consequently, condensation takes place and cumulus clouds are formed. With thunder and lightening, heavy rainfall takes place but this does not last long. Such rain is common in the summer or in the hotter part of the day. It is very common in the equatorial regions and interior parts of the continents, particularly in the northern hemisphere.

21. Ans. c

Explan - The factors which affect the distribution of temperature of ocean water are:

Latitude: the temperature of surface water decreases from the equator towards the poles because the amount of insolation decreases pole ward.

Unequal distribution of land and water: the oceans in the northern hemisphere receive more heat due to their contact with larger extent of land than the ocean in the southern hemisphere.

Prevailing wind: the winds blowing from the land towards the oceans drive warm surface water away from the coast resulting in the upwelling of cold water



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from below. It results into the longitudinal variation in the temperature. Contrary to this, the onshore winds pile up warm water near the coast and this raises temperature.

Ocean currents: warm ocean current raise the temperature in cold areas while the cold currents decrease the temperature in warm ocean areas. Gulf Stream (warm current) raises the temperature near the eastern coast North America and the West Coast of Europe while the Labrador Current (cold current) lowers the temperature near the north-east coast of North America.

22. Ans. b

Explan - Nitrogen cycle, which has its reservoir in the form of nitrogen gas (N₂) constitute about 78% of the atmosphere. Various materials including different nutrients and metals move in the ecosystem in a cyclic manner. The major reserves or storage compartment of the materials are known as reservoirs. When the major reservoir of a nutrient is in the atmosphere, it is known as a gaseous cycle. When the reservoir is in the earth's crust or sediments, it is known as a sedimentary cycle e.g., phosphorus cycle-which has its reserve as phosphate rocks.

Movement of the materials from one reservoir to another may be driven by physical agents like wind or gravitational energy. It may also be due to chemical energy, e.g., when the water body reaches saturation-the reservoir is chemically full and therefore, no longer can hold it as such. Then the material usually is precipitated out. The average time for which a material (molecule of a substance) remains in a reservoir is known as its residence time.

23. Ans. c

Explan - The compensation point, where photosynthesis equals respiration, defines the lower limit of the photic zone. Above this point, the phytoplankton population grows rapidly because there is abundant sunlight to support fast rates of photosynthesis. Below the compensation point, the intensity of sunlight is too low and the rate of respiration is faster than the rate of photosynthesis, and therefore the phytoplankton cannot survive. The photic zones of the world's lakes and oceans are critically important because the phytoplankton, the primary producers upon which the rest of the food web depends, is concentrated in these zones.

24. Ans. b

Explan - Both the species benefit in mutualism and both lose in competition in their interactions with each other. In both parasitism and Predation only one species

benefits (parasite and predator, respectively) and the interaction is detrimental to the other species (host and prey, respectively). The interaction where one species is benefitted and the other is neither benefitted nor harmed is called commensalism. In amensalism on the other hand one species is harmed whereas the other is unaffected. Predation, parasitism and commensalisms share a common characteristic- the interacting species live closely together.

25. Ans. d

Explan - The river Amazon flows through the **equatorial** region. Notice how it flows from the mountains to the west and reaches the Atlantic Ocean to the east. The place where a river flows into another body of water is called the river's **mouth**. Numerous tributaries join the Amazon River to form the Amazon basin. The river basin drains portions of Brazil, parts of Peru, Bolivia, Ecuador, Columbia and a small part of Venezuela.

26. Ans. d

Explan - The tributaries of rivers Ganga and Brahmaputra together form the Ganga-Brahmaputra basin in the Indian subcontinent. The basin lies in the sub-tropical region that is situated between 10°N to 30°N latitudes. The tributaries of the River Ganga and the tributaries of Brahmaputra drain it. The Ganga River is joined by its tributaries like the Ghaghra, the Son, the Chambal, the Gandak and the Kosi. The Brahmaputra River is joined by its tributaries like the Dibang, the Lohit the Subansiri, the Manas, the Sankosh, the Tista, the Dhansiri and the Champamati.

27. Ans. c

Related Information - 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. The Coriolis force is directly proportional to the angle of latitude. It is maximum at the poles and is absent at the equator. The Coriolis force acts perpendicular to the pressure gradient force. The pressure gradient force is perpendicular to an isobar. The higher the pressure gradient force, the more is the velocity of the wind and the larger is the deflection in the direction of wind.

28. Ans. c

Explan - Areas having more than 200 cm of rainfall with a short dry season trees reach great heights up to 60 metres or even above. It has a luxuriant vegetation of all kinds - trees, shrubs, and creepers giving it a



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multilayered structure. There is no definite time for trees to shed their leaves. Important trees of this forest are ebony, mahogany, rosewood, rubber and cinchona. The one horned rhinoceros are found in the jungles of Assam and West Bengal and plenty of birds, bats, sloth, scorpions and snails are also found.

29. Ans. d

Related Information - The name "Himalaya" means "the abode or house of snow" in Sanskrit (i.e. hima "snow", and alaya "abode or house").

- These mountain ranges run in a west-east direction from the Indus to the Brahmaputra.
- The Himalayas run along the northern border of India.
- The Himalayas form an arc which is about 2,400 km long.
- The width varies from 400 km in Kashmir to 150 km in Arunachal Pradesh.

The altitudinal variations are greater in the eastern part than in the western part.

30. Ans. d

Extra Information - Seaweed has been around for about 3 billion years and is found in virtually every area of the world's oceans. Most live in shallow waters but some types of seaweed can grow to hundreds of feet to reach near the water's surface, to absorb sunshine. Seaweed can eventually develop into entire colonies, which can grow for miles! Seaweed is an incredibly versatile ingredient in foods, as well as being beneficial for hair. In Veganese, (our vegan conditioner), agar seaweed takes the place of lanolin to soften and add shine. Retread, our super nutritious and heaviest conditioner uses an agar infusion to hydrate frizzy, out of condition locks. If you're looking for body, softness and shine, look no further than shampoos and conditioners made with seaweed.

Seaweed is considered algae, not a plant. Although many varieties look like plants, they lack the vascular structure. However, like plants, seaweed depends on sunlight to create energy through photosynthesis.

31. Ans. d

Extra Information - Organic farming will help to:

- (i) Achieve sustainability of natural resources on the one hand, and
- (ii) Exploit the growing global market for organic food on the other.

India has comparative advantage over many other countries because of the vast cultivated area, which has

remained free of contamination from chemicals. Also, it is spread over distinctly varying agro-climatic conditions. For example, large areas in north-east region, northern hills and rain fed regions with low or nil use of agro-chemicals can be instantly converted to organic farming.

In order to promote organic farming, the government has launched a new programme, called National Project on Organic Farming. The programme is being implemented in the areas where use of agro-chemicals is very low, those which fall in agro-export zones, and in urban hinterland area.

32. Ans. c

Explan - Algae are a group of simple eukaryotes in which, like plants, chlorophyll is found. They are photosynthetic autotrophs and have cellulose in their cell wall. However unlike plants but like fungi, their organs are unicellular and body is simple, thallus. Therefore they are placed in another kingdom, the Protista.

Algae, are mostly (found in water). A large number of algae are found in vast saltwater oceans. These are called marine algae, other are found in lakes, ponds, puddles, streams and rivers. These are called fresh water algae. Some marine algae, called the helps and grow as long as 60 meters or more in a season. Some of them are used as food.

33. Ans. c

Related Information - National Highways in India:

- NH 1 - Delhi-Jalandhar-Amritsar-Wagah Border
- NH 1A - Jalandhar-Jammu-Srinagar-Uri
- NH 2 - Delhi-Agra-Allahabad-Kolkata
- NH 3 - Agra-Indore-Dhule-Mumbai
- NH 4 - Thane-Pune-Bangalore-Chennai
- NH 5 - Jharpokaria-Baleshwar-Cuttack-Vijaywada-Chennai
- NH 6 - Dhule-Nagpur-Kolkata
- NH 7 - Varanasi-Nagpur-Bangalore- Kanyakumari

34. Ans. c

Explan - Rugged terrain and unfavourable climatic conditions are primarily responsible for sparse population in some areas. Hilly, dissected and rocky nature of the terrain, moderate to low rainfall, shallow and less fertile soils have influenced population densities in these areas. The Northern Plains and Kerala in the south have high to very high population densities because of the flat plains with fertile soils and abundant rainfall. Identify the three



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states of the Northern Plains with high population densities.

35. Ans. d

Related Information - Methods of conservation of soil-Ploughing along the contour lines can decelerate the flow of water down the slopes. This is called contour ploughing.

- Steps can be cut out on the slopes making terraces. Terrace cultivation restricts erosion. Western and central Himalayas have well developed terrace farming.
- Large fields can be divided into strips. Strips of grass are left to grow between the crops.

This breaks up the force of the wind. This method is known as strip cropping.

- Planting lines of trees to create shelter also works in a similar way. Rows of such trees are called shelter belts. These shelter belts have contributed significantly to the stabilisation of sand dunes and in stabilising the desert in western India.

36. Ans. a

Explan - Type of climate Areas

Amw - monsoon with short dry season: West coast of India south of Goa

As - Monsoon with dry summer: summer Coromandel coast of Tamil Nadu

Bwhw - Semi Arid steppe climate: North-western Gujarat, some parts of western Rajasthan and Punjab

Bwhw - Hot desert: Extreme western Rajasthan

Cwg - Monsoon with dry winter: Ganga plain, eastern Rajasthan, northern Madhya Pradesh, most of North-east India.

37. Ans. d

Extra Information - The last two however, have less influence. The fact that the earth's axis makes an angle of 66 degrees with the plane of its orbit round the sun has a greater influence on the amount of insolation received at different latitudes. The second factor that determines the colour of the sky is the result of scattering of amount of insolation received is the angle of inclination of the rays. This depends on the latitude of a place. The higher the latitude the less is the angle they make with the surface of the earth resulting in slant sun rays.

38. Ans. d

Related Information - The food web increases the stability of ecosystem. It provides other source of food and allows the endangered species to grow. The food web is modified by the taste and food habits of organisms. The availability of food and other factors

are very important for its survival. In the sunderban forests the tiger eats the fishes and crabs when their taste of food is not present. There are few organisms which are present at more than one trophic levels. For example, the human beings are herbivorous at one trophic level and are carnivorous at the other trophic level. There are certain varieties of cats which feed on mice as well as on the birds. These are known as wild cats. The concept of food web looks more ecological than the concept of food chain. The rabbit cannot kill by starvation if his preferred plant is reduced in the quantity. It can feed on the other plants. They can recover from loss by the preferred ones.

39. Ans. c

Explan - INDCs are the primary means for governments to communicate internationally the steps they will take to address climate change in their own countries. INDCs reflect each country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities. Some countries also address how they'll adapt to climate change impacts, and what support they need from, or will provide to, other countries to adopt low-carbon pathways and to build climate resilience.

Countries across the globe adopted an historic international climate agreement at the U.N. Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP21) in Paris in December 2015. In anticipation of this moment, countries publicly outlined what post-2020 climate actions they intended to take under the new international agreement, known as their Intended Nationally Determined Contributions (INDCs). The climate actions communicated in these INDCs largely determine whether the world achieves the long-term goals of the Paris Agreement: to hold the increase in global average temperature to well below 2°C, to pursue efforts to limit the increase to 1.5°C, and to achieve net zero emissions in the second half of this century.

40. Ans. b

Explan - The biggest coral reefs are found in the clear, shallow ocean waters of the tropics and subtropics where they grow quickly. Coral reefs are large underwater structures composed of the skeletons of coral, which are marine invertebrate animals. The coral species that build coral reefs are known as hermatypic or "hard" corals because they extract calcium carbonate from seawater to create a hard, durable exoskeleton that protects their soft, sac-like bodies. Each individual coral is referred to as a polyp. New coral polyps live on the calcium carbonate exoskeletons of their ancestors, adding their own exoskeleton to the existing coral structure. As the centuries pass, the coral reef slowly



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grows one tiny exoskeleton at a time, until they become massive features of the submarine environment.

41. Ans. b

Explan - In Andhra Pradesh, Nellore district produces the best quality mica. Mica is mainly used in the electrical and electronic industries. It can be split into very thin sheets which are tough and flexible. Mica in India is produced in Jharkhand, Andhra Pradesh and Rajasthan followed by Tamil Nadu, West Bengal and Madhya Pradesh. In Rajasthan mica belt extends for about 320 kms from Jaipur to Bhilwara and around Udaipur.

42. Ans. a

Explan - Some Famous Local Storms of Hot Weather Season:

- (i) **Mango Shower:** Towards the end of summer, there are pre-monsoon showers which are a common phenomena in Kerala and coastal areas of Karnataka. Locally, they are known as mango showers since they help in the early ripening of mangoes.
- (ii) **Blossom Shower:** With this shower, coffee flowers blossom in Kerala and nearby areas.
- (iii) **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".
- (iv) **Loo:** Hot, dry and oppressing winds blowing in the Northern plains from Punjab to Bihar with higher intensity between Delhi and Patna.

43. Ans. b

Related Information - As such, while areas of high rainfall are liable to be affected by floods, areas of low rainfall are drought-prone. The western coast and north eastern India receive over about 400 cm of rainfall annually. However, it is less than 60 cm in western Rajasthan and adjoining parts of Gujarat, Haryana and Punjab. Rainfall is equally low in the interior of the Deccan plateau, and east of the Sahyadris. A third area of low precipitation is around Leh in Jammu and Kashmir. The rest of the country receives moderate rainfall. Snowfall is restricted to the Himalayan region.

44. Ans. a

Explan - The drumlins form due to dumping of rock debris beneath heavily loaded ice through fissures in the glacier. It is an erosional land formed by the Glacier. The stoss end gets blunted due to pushing by moving ice. Drumlins give an indication of direction of glacier movement.

45. Ans. c

Explan - For the statements 1 and 4, reverse is true i.e. Slump is slipping of one or several units of rock debris with a backward rotation with respect to the slope over which the movement takes place. Rock fall is free falling of rock blocks over any steep slope keeping itself away from the slope. **Landslides** are relatively **rapid and perceptible** movements. The **materials involved are relatively dry**. The size and shape of the detached mass depends on the nature of discontinuities in the rock, the degree of weathering and the steepness of the slope.

46. Ans. c

Explan - The thickness of the ozone in a column of air from the ground to the top of the atmosphere is measured in terms of Dobson units (DU). Ozone gas is continuously formed by the action of UV rays on molecular oxygen, and also degraded into molecular oxygen in the stratosphere. There should be a balance between production and degradation of ozone in the stratosphere. Of late, the balance has been disrupted due to enhancement of ozone degradation by chlorofluorocarbons (CFCs). CFCs find wide use as refrigerants. CFCs discharged in the lower part of atmosphere move upward and reach stratosphere. In stratosphere, UV rays act on them releasing Cl atoms. Cl degrades ozone releasing molecular oxygen, with these atoms acting merely as catalysts; Cl atoms are not consumed in the reaction. Hence, whatever CFCs are added to the stratosphere, they have permanent and continuing affects on Ozone levels. Although ozone depletion is occurring widely in the stratosphere, the depletion is particularly marked over the Antarctic region. This has resulted in formation of a large area of thinned ozone layer, commonly called as the ozone hole.

47. Ans. d

Extra Information - This mission has adopted an integrated cross-sectoral approach as it will be implemented on both public as well as private lands with a key role of the local communities in planning, decision making, implementation and monitoring.

48. Ans. c

Explan - Estuarine environments are among the most productive on earth, creating more organic matter each year than comparably-sized areas of forest, grassland or agricultural land. The sheltered waters of estuaries also support unique communities of plants and animals specially adapted for life at the margin of the sea.

Although influenced by the tides, they are protected from the full force of ocean waves, winds and storms by land forms such as barrier islands or peninsulas.

Many different habitat types are found in and around estuaries, including shallow open waters, freshwater and saltwater marshes, swamps, sandy beaches, mud and sand flats, rocky shores, oyster reefs, mangrove forests, river deltas, tidal pools and sea grass beds.



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49. Ans. c

Explan - The rate of fallout largely depends on the altitude of the nuclear explosion and to a lesser extent the magnitude of the explosion. If the explosion is in the air where it is unable to suck dirt particles from the ground then the particles are lighter and take much longer to fallout. If the blast is able to get particles from the ground then they fall much quicker in a more immediate area.

Nuclear fallout is the particles of matter in the air made radioactive from a nuclear explosion. Some of these particles fall in the immediate area and some get blown by upper winds many thousands of miles. Eventually they fall to the earth. This is called fallout.

Weather conditions can affect fallout immensely. Particularly rainfall can "rain out" fallout to create very intense localized concentrations. This poses a serious health hazard.

50. Ans. a

Explan - Seismographs located at any distance within 105° from the epicentre, record the arrival of both P and S-waves. However, the seismographs located beyond 145° from epicentre; record the arrival of P-waves, but not that of S-waves. Thus, a zone between 105° and 145° from epicentre was identified as the shadow zone for both the types of waves.

Director : Ms. Akhtar J. Khan

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