

Key with Explanation

<p>1</p>	<p>D</p> <p>Green manure crops are those crop varieties that are grown and turned into the soil to improve its overall quality. A green manure crop can be cut and then ploughed into the soil or simply left in the ground for an extended period prior to tilling. Examples include grass mixtures and legume plants. Advantages: Green manuring improves soil structure, increases water holding capacity and decreases soil loss by erosion. Growing of green manure crops in the off season reduces weed proliferation and weed growth. Green manuring helps in reclamation of alkaline soils and in tilling the soil. Alfalfa, for instance, can send down roots as deep as 60 feet, pulling up nutrients for next year's crops.</p>	<p>cessfully concluded in Paris after intense negotiations by the Parties followed by the adoption of the Paris Agreement on post-2020 actions on climate change. This universal agreement will succeed the Kyoto Protocol. The agreement sets a binding obligation on developed countries to provide financial resources to developing countries for both mitigation and adaptation while encouraging other countries to provide support on a voluntary basis. It reaffirms that developed countries will take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds. The Paris Agreement contains strengthened provision on technology development and transfer with a new technology framework being established. The emphasis on R&D and innovation in the Paris Agreement is a critical step in furthering the implementation of the provisions of the Convention. It encourages transfer of green technology. However, it does not prevent granting IPRs for green technology.</p>
<p>2</p>	<p>D</p> <p>The NMCG is established by (initially under Ministry of Environment and Forests) the Ministry of Water Resources, River Development and Ganga Rejuvenation society under the Societies Registration Act 1860 for the implementation of the World Bank assisted National Ganga River Basin Project (NGRBP) of the National Ganga River Basin Authority (NGRBA). The NMCG is the planning, financing, monitoring and coordinating body at the Union Government and being supported by suitable State level Program Management Groups (SPMGs) for the purpose of achieving the twin objectives of the NGRBA: effective abatement of pollution and conservation of the river Ganga by adopting a comprehensive river basin approach. For this purpose, the NMCG is empowered to take all necessary actions that may be necessary or incidental for the achievement of the objectives.</p>	<p>4</p> <p>B</p> <p>The Montreal Protocol on Substances that Deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer) is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion.</p> <p>For example, Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Carbon tetrachloride (CTC) and halons. Hydro fluorocarbons (HFCs) are not Ozone depleting and replaced CFCs and HCFCs; however, their Global Warming Potential is very high. Since HFCs replaced HCFCs and CFCs, the talks of HFCs being in Montreal protocol owing to its success went on for years. In November 2015, the 197 Parties to the Montreal Protocol agreed to begin work on</p>
<p>3</p>	<p>B</p> <p>The 21st Conference of Parties (COP 21) under the United Nations Framework Convention on Climate Change (UNFCCC) suc-</p>	

	<p>an amendment that will reduce the global production and consumption of HFCs at the 27th Meeting of the Parties (MOP), held in Dubai. Halons, were earlier used in fire extinguishers. However they have been phased out under Montreal protocol except their usage in Defence sector, which is exempt from Montreal Protocol. Thus all statements are correct.</p>		<p>ation of renewable energy from generation points to the load centres by creating intra-state and inter-state transmission infrastructure is under implementation in renewable resource rich states for the likely renewable power capacity addition during 12th Five Year Plan period, i.e., by March 2017. The intra-state transmission component of the project is being implemented by the respective states and the Power Grid Corporation of India (PGCIL) is implementing inter-state transmission component. With the Green Energy Corridors, the intra-State network will feed the renewable energy to the respective State grids and the high capacity transmission corridors and inter-State network will connect major renewable energy pockets with the national grid.</p>
5	<p>B</p> <p>The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. IPCC assessments provide a scientific basis for governments at all levels to develop climate related policies, and they underlie negotiations at the UN Climate Conference - the United Nations Framework Convention on Climate Change (UNFCCC). As an intergovernmental body, membership of the IPCC is open to all member countries of the United Nations (UN) and WMO. Currently 195 countries are Members of the IPCC. The IPCC works by assessing published literature. It does not conduct its own scientific research. IPCC assessments are written by hundreds of leading scientists who volunteer their time and expertise as Coordinating Lead Authors and Lead Authors of the reports. They enlist hundreds of other experts as Contributing Authors to provide complementary expertise in specific areas.</p>	7	<p>A</p> <p>The power conferred by the Environment Protection Act are followed under the following:</p> <ul style="list-style-type: none"> • Amendments to Principal Rules • Coastal Regulation Zone • Delegation of Powers • Eco-marks Scheme • Eco-sensitive Zone • Environmental Clearance - General • Environmental Labs • Environmental Standards • Hazardous Substances Management • Loss Of Ecology • Noise Pollution • Ozone Layer Depletion <p>Water Pollution 2-T Oil</p> <p>The Environment (Protection) Act, 1986 empowers the Central Government to make the rules for the regulation and control of noise producing and generating sources. Since Ozone Depleting Substances (ODS) Rules is framed under the Environment Pro-</p>
6	<p>D</p> <p>Government of India and KFW (Federal Republic of Germany) signed a two loan agreements worth Euro 125 Million for financing two projects under the Green Energy Projects (GEC) programme- Himachal Pradesh (Euro 57 million) and Andhra Pradesh (Euro 68 million) in October 2015. A Green Energy Corridor project for evacu-</p>		

	<p>tection Act 1986, any violation of ODS rules will attract the penalties specified in the EP Act. The regulation activities related to GMOs is governed under Hazardous Substances Management under the provisions of the Environment (Protection) Act, 1986 through the Ministry of Environment and Forests (MoEF). Conservation of biological resources and associated knowledge comes under Biological Diversity Act, 2002. Rest all are covered under Environment Protection Act, 1986. Hence C is the correct answer.</p>		<p>is termed as thermal pollution. o The rise in temperature reduces the oxygen holding capacity of the water body, as oxygen carrying capacity of warm water is less than cold water. This causes deaths or migration of several fish species like trout etc</p> <p>However, blue green algae growth enhances in the warm water. They produce a toxin which further hampers the biodiversity.</p>
8	<p>C</p> <p>The Zoological Survey of India (ZSI), a subordinate organization of the Ministry of Environment and Forests was established in 1916 as a national centre for faunistic survey and exploration of the resources leading to the advancement of knowledge on the exceptionally rich faunal diversity of the country. ZSI has its headquarters at Kolkata.</p> <p>It has not been established under any act. Hence, it is not a statutory body.</p> <p>Its activities include: o Study of the fauna of states o Fauna of conservation areas o Fauna of important ecosystems o Status survey of endangered species o Fauna of India and Ecological Studies & Environmental impact assessments.</p> <p>One of its primary objectives is: Preparation of Red Data Book, Fauna of India and Fauna of States.</p> <p>ZSI undertakes Environmental Impact Assessment (EIA) with special reference to ecology and wildlife, and provides necessary services to assess possible impact and also on mitigating measures. ZSI assists development agencies in advising alternatives to minimize ecological damage both In short and long time frame perspectives.</p>	10	<p>C</p> <p>The deer is endemic to Keibul Lamjao National Park (KLNP). It is listed as a critically endangered (Mentioned in Red pages and not the yellow pages) species by International Union for Conservation of Nature (IUCN). Conservation efforts have helped in reviving the population of the deer to 204 in 2013 from less than 100 in 2008. Manipur State Forest Department has decided to translocate a section of Sangai deer with an aim to save it from extinction. The deer is endemic to Keibul Lamjao National Park (KLNP) will be translocated to Pumlun Pat which is close existing habitat to Loktak.</p>
9	<p>C</p> <p>Thermal Pollution: When the discharged water that is released back into the water body is around 10 degrees Celsius higher than the temperature of the water body it</p>	11	<p>C</p> <p>Khangchendzonga National Park (KNP), Sikkim has been inscribed as India's first "Mixed World Heritage Site" on UNESCO World Heritage List, by fulfilling the nomination criteria under both natural and cultural heritage. The KNP exhibits one of the widest altitudinal ranges of any protected area worldwide. The Park has an extraordinary vertical sweep of over 7 kilometres (1,220m to 8,586m) within an area of only 178,400 ha and comprises a unique diversity of lowlands, steep-sided valleys and specular snow-clad mountains including the world's third highest peak, Mt. Khangchendzonga. Numerous lakes and glaciers, including the 26 km long Zemu Glacier, dot the barren high altitudes. The KNP lies within the Himalaya global biodiversity hotspot and displays an unsurpassed range of sub-tropical to alpine ecosystems.</p>

	<p>The cultural significance of KNP is portrayed by the multi-layered sacred landscape of Khangchendzonga and the cultural and religious relevance of the hidden land (beyul in Tibetan Buddhism and Mayel Lyang, in Lepcha tradition) is specific to Sikkim and is a unique example of co-existence and exchange between different religious traditional and people.</p>	15	<p>A</p> <p>Food chains are reasonably short. Four vertical links is a common maximum because:</p> <p>Loss of energy is progressively higher for higher trophic levels (because the species at higher trophic levels being larger in size have to move and work for getting food and therefore more energy is lost due to respiration) Higher trophic levels tend to be less discrete than the lower ones because the organisms at progressively higher trophic levels receive energy from more than one source and are generalists in their feeding habit and they are more efficient in using their available food.</p>
12	<p>B</p> <p>The global emissions profile shows that emissions have been distributed very unequally among different countries. If historical CO2 emissions from 1970 to 2014 are considered, India with 39.0 Gt is way behind the top three emitters - the USA, the EU and China. The USA's emissions, for example, were around six times India's. Even if historical levels are discounted and only present levels considered, both in terms of absolute and per capita emissions, India is way behind the three major CO2 emitters. In 2014, in terms of absolute emissions, China was at the top, while in terms of per capita emissions, the USA was at the top. India's per capita emissions are among the lowest in the world.</p>	16	<p>A</p> <p>Ecosystem services are the direct and indirect contributions of ecosystems to human well-being.</p> <p>Types of Ecosystem Services:</p> <p>Provisioning Services: These are ecosystem services that describe the material or energy outputs from ecosystems. They include food, water, medicinal resources and other resources.</p> <p>Regulating Services: These are the services that ecosystems provide by acting as regulators. They include regulating the quality of air and soil or by providing flood, waste-water treatment, moderation of extreme events and carbon sequestration and storage.</p> <p>Supporting Services: They include providing habitats for species and maintenance of genetic diversity.</p> <p>Cultural Services: They include tourism, spiritual experience and sense of place and recreation and mental and physical health.</p>
13	<p>A</p> <p>Implementing entities are the national, regional and multilateral institutions accredited by the Adaptation Fund Board to receive direct financial transfers from the Fund in order to carry out adaptation projects and programmes.</p> <p>National Bank for Agriculture and Rural Development (NABARD) is the National Implementation Agency.</p>	17	<p>D</p> <p>The Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. It is an intergovernmental treaty, concluded un-</p>
14	<p>C</p> <p>The National Institute of Wind Energy (NIWE) has recently launched Wind Energy Resource Map of India at 100 meter above ground level (AGL) on online Geographic Information System platform.</p>		

	<p>der the aegis of the United Nations Environment Programme, concerned with the conservation of wildlife and habitats on a global scale. As the only global convention specializing in the conservation of migratory species, their habitats and migration routes, CMS complements and co-operates with a number of other international organizations, NGOs and partners. India recently signed Memoranda of Understanding (MOU) on the Conservation of Migratory Birds of Prey in Africa and Eurasia, also called the 'Raptor MOU' with the Convention on Conservation of Migratory Species (CMS). With the signing of this MOU, India will become the 54th signatory to the MOU.</p>	20	<p>B</p> <p>Under Intended Nationally Determined Contributions (INDCs), India's target consists of:</p> <ol style="list-style-type: none"> 1. Produce 40 per cent of electricity from non-fossil fuel based energy resources by 2030, if international community helps with technology transfer and low cost finance. <p>How: Install 175 GW of solar, wind and biomass electricity by 2022, and scale up further in following years. Aggressively pursue development of hydropower. Achieve the target of 63 GW of installed nuclear power capacity by 2032.</p> <ol style="list-style-type: none"> 2. Create an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent by 2030 through additional forest and tree cover. 3. Develop robust adaptation strategies for agriculture, water and health sectors. 4. Reduce emission intensity by 33 to 35 per cent by 2030 compared to 2005 levels.
18	<p>B</p> <p>Coral reefs are also called rainforests of ocean. About 1,000,000 species inhabits the corals reefs which is more diverse than rainforests.</p>		
19	<p>D</p> <p>Some species of trees and plants are actually fire dependent. They must have fire every 3-25 years in order for life to continue. Some trees have fire resistant bark and cones that require heat to open and release seeds for regeneration. Chaparral plants, including manzanita, chamise and scrub oak, also require intense heat for seed germination. These plants actually encourage fire by having leaves that are covered with flammable resins. Without fire, these trees and plants would eventually succumb to old age with no new generations to carry on their legacy. Fire kills diseases and insects that prey on trees and provides valuable nutrients that enrich the soil. More trees die each year from insect infestation and disease than from fire. Many forests struggle against diseases such as pitch canker and bark beetle infestations - pests that destroy the part of the tree that delivers nutrients to the roots, leaves and needles. Fire kills pests and keeps the forest healthy. Vegetation that is burned by fire provides a rich source of nutrients that nourish remaining trees. Fire removes low-growing underbrush, cleans the forest floor of debris, opens it up to sunlight, and nourishes the soil. Reducing this competition for nutrients allows established trees to grow stronger and healthier.</p>	21	<p>C</p> <p>Biofuel is energy made from living matter, usually plants. Bioethanol, biodiesel, and biogas are types of biofuels. Biofuels are considered renewable energies, emit less than fossil fuels, and have received increasing attention in the transition to low carbon economy. Bioethanol is the most well know biofuel and is an alcohol produced from corn, sorghum, potatoes, wheat, sugar cane, even biomass such as corn-stalks and vegetable waste. Biodiesel is oil from plants or animals that has been used as an alternative to or blended with petroleum diesel in automobiles and industrial fleets with diesel engines. Bio ethanol is produced by fermentation process and Biodiesel by transesterification. Jatropha is source of biodiesel.</p>

<p>22</p>	<p>C</p> <p>Dandeli Anshi Tiger reserve is in Uttarakannada of Karnataka; through that river kali is flowing, hence also called as kali tiger reserve. Umred Karhandla Wildlife sanctuary is in Maharashtra, through which the river wainganga, a tributary of Godavari River flows. Nagarjunsagar Srisailem Tiger reserve is in Nallamala range of Andhra Pradesh, and the river Krishna flows through that.</p>	<p>25</p>	<p>D</p> <p>Primary pollutants are harmful chemicals that are released directly from a source into the atmosphere. E.g. Particulate matter, oxides of carbon and nitrogen, Sulphur dioxide, Hydrocarbons like methane and benzene.</p> <p>Secondary air pollutants are also harmful chemicals but they are produced from chemical reactions involving the primary pollutants. E.g. Ozone and Sulphur Trioxide.</p>
<p>23</p>	<p>B</p> <p>Pyramid of Number in Pond Ecosystem - In a pond ecosystem, the producers are phytoplanktons such as algae, bacteria etc. which are maximum in number. The small herbivorous fishes, rotifers etc. are smaller in number than producers, while the small carnivorous fishes are even less in number. Finally, the apex consumers or biggest carnivorous fishes are least in number. Therefore, the pyramid is upright. Pyramid of Biomass in Pond Ecosystem - Pond is an aquatic ecosystem. In the aquatic system, the biomass can increase at higher trophic levels with the carnivorous fish having the largest biomass. Thus, the pyramid is inverted. Pyramid of Energy is always upright. Therefore, (b) is the correct answer.</p>	<p>26</p>	<p>A</p> <p>Sere is the sequence of communities succeeding each other during the course of an ecological succession. The different communities or stages represented by combinations of mosses, herbs, shrubs and trees replacing one another during succession are referred to as seral stages or seral communities.</p>
<p>24</p>	<p>C</p> <p>Bioremediation is the use of living organisms primarily microorganisms to degrade the environmental contaminants or pollutants into less toxic forms. It uses naturally occurring bacteria and fungi or plants to degrade or detoxify substances hazardous to human health and the environment. The microorganisms may be indigenous to a contaminated area or they may be isolated from elsewhere and brought to the contaminated site. Contaminant compounds are transformed by living organisms through reactions that take place as a part of their metabolic processes. For bioremediation to be effective microorganisms must enzymatically attack the pollutants and convert them to harmless products.</p>	<p>27</p>	<p>C</p> <p>A louse is an insect which generally sucks blood out of an organism. Here, this activity of lice can be categorized as parasitism because it is gaining blood (+) on the cost of the buffalo (-)</p> <p>A crane perched upon a buffalo so as to catch hold of the insects from the soil as a buffalo walks along. Here this interaction is Commensalism because, the crane is being benefitted with provision of insects (+) and this will not influence the buffalo anywhere (0).</p>
		<p>28.</p>	<p>A</p> <p>A seral community (or sere) is an intermediate stage found in ecological succession in an ecosystem advancing towards its climax community. The final community in ecological succession that is in near equilibrium with the environment is called a climax community.</p>

<p>29</p>	<p>B</p> <p>Renewable source of energy: Renewable sources are those which can be generated continuously in nature and are inexhaustible. Following are the renewable sources:</p> <ul style="list-style-type: none"> • solar energy • Geo-thermal energy (statement 1 correct) • Tidal energy • Wind energy • Hydropower • Biomass energy (statement 3 correct) • Bio-fuels (statement 2 correct) • Hydrogen <p>Following are the non-renewable sources of fossil fuels (coal, petroleum etc)</p> <p>Uranium (statement 4 incorrect)</p> <p>Thorium</p>		<p>Some have also raised the issue that interlinking a toxic river with a non-toxic one will have a devastating impact on rivers, humans and wildlife. Hence, statement 4 is wrong.</p> <p>32</p> <p>B</p> <p>Except Cheetah Rest of the all are naturally found in India. In India Cheetah are extinct in the wild or regionally extinct. Cheetahs are particularly vulnerable to habitat loss and fragmentation of their habitat. One reason for their extirpation across most of their Asian range is thought to have been the live capture of cheetahs, which were then trained to hunt deer and gazelle as sport for the aristocracy. Other key causes of the disappearance of Cheetah from the region are likely to have been depletion of wild prey, especially gazelles, the direct killing of Cheetahs. Black necked crane winters mainly in remote parts in Bhutan, and Arunachal Pradesh, India. The Ramsar site Tsomoriri lake in India is said to represent the only breeding ground outside of China for the Black-necked crane. The Clouded Leopard is found in the Himalayan foothills. In India, Pangolin is widely distributed from the plains and lower hills south of the Himalayas to extreme southern India.</p>
<p>30</p>	<p>A</p> <p>Both Loktak and Kolleru are fresh water Ramsar sites located in Manipur and Andhra Pradesh respectively. Sasthamkotta lake is a brackish-water lake in Kerala. Similarly, Chilika lake has a status of coastal Ramsar Site.</p>		<p>33</p> <p>A</p> <p>Eutrophication is the enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen, phosphorus, or both. Extensive use of fertilizers results in significant concentrations of nutrients particularly nitrogen, in agricultural runoff. If eroded soil reaches the lake, both phosphorus and the nitrogen in the soil contribute to eutrophication. Wetlands are increasingly used to solve the problem of diffuse pollution from agriculture which causes eutrophication. Nitrate is converted in wetlands to free nitrogen and released to the air. This is not harmful, as free nitrogen compromises about 4/ 5ths of the atmosphere. Phosphorus is adsorbed by wetland soils and, like nitrogen, is taken</p>
<p>31</p>	<p>A</p> <p>The National river interlinking project envisages linking 26 major rivers of India by constructing 30 different link canals. It has two components: (a) Himalayan Rivers Development Component and (b) Peninsular Rivers Development Component. The two can be linked on the Mahanadi. Interlinking of rivers shall provide additional irrigation and generation of hydropower, besides providing substantial flood control in various river basins such as the Ganga and Brahmaputra basins enhance the inland navigation facilities across the country. It has been pointed out that surplus water should not be diverted from a river on such a large scale as excess water is necessary to keep river basins healthy-it percolates down the soil and recharges groundwater.</p>		

	<p>up by the plants. Both nitrogen and phosphorus may therefore be removed by wetlands. Rain water contains phosphorus and nitrogen from air pollution. As nitrogen is more mobile in the atmosphere than phosphorus, it is usually over 20 times more concentrated than phosphorus. Nitrogen can only be reduced in rain water by extensive controls of the air pollution in the entire region. When lakes are used for aquaculture, excess fish food pollutes the water as complete use of the food cannot be achieved. Nitrogen and phosphorus present in the excess food is dissolved or suspended in the water. The use of lakes for aquaculture therefore needs careful environmental planning and management practices by the owners and workers.</p>		<p>NOX emissions are Nitrogen Oxide emissions which are more prevalent in Diesel engines. Long Term exposure can cause Nose and eye irritation and damage lung tissue. PM is Particulate matter, again more prevalent in a Diesel engine. Long Term exposure can harm the respiratory tract and reduce lung function.</p>
<p>34</p>	<p>A</p> <p>Following are the pollutants covered under Vehicular Emissions norms under the Bharat Stage emission standards:</p> <ol style="list-style-type: none"> 1. Carbon Monoxide (CO) 2. NOx 3. Particular Matter (PM) 4. Hydro Carbon (HC) <p>Bharat Stage emission standards, introduced in 2000, are emission standards that have been set up the Central government to regulate the output of air pollutants from internal combustion engine equipment, including motor vehicles. The different norms are brought into force in accordance with the timeline and standards set up by the Central Pollution Control Board which comes under the Ministry of Environment and Forests and Climate Change.</p> <p>The Bharat Stage norms are based on European regulations.</p> <p>CO emissions are Carbon Monoxide emissions are more evident in Petrol engines. Long Term exposure can prevent oxygen transfer and increase headaches/nausea.</p> <p>HC emissions are Hydrocarbons which are again more prevalent in Petrol engines. Short term exposure can cause headaches, vomiting and disorientation.</p>	<p>35</p>	<p>C</p> <p>Photochemical smog occurs in warm, dry and sunny climate. A classical smog occurs in cool humid climate. When fossil fuels are burnt, a variety of pollutants are emitted into the earth's atmosphere. Two of the pollutants that are emitted are hydrocarbons (unburnt fuels) and nitric oxide. When these pollutants build up to sufficiently high levels, a chain reaction occurs from their interaction with sunlight in which NO is converted into nitrogen dioxide (NO₂). Photochemical smog has high concentration of oxidizing agents and is therefore called oxidizing smog. These oxidizing compounds have been linked to a variety of negative health outcomes; ozone, for example, is known to irritate the lungs.</p>
		<p>36</p>	<p>C</p> <p>First Generation Biofuels - They are produced directly from food crops. The biofuel is ultimately derived from the starch, sugar, animal fats, and vegetable oil that these crops provide. It is important to note that the structure of the biofuel itself does not change between generations, but rather the source from which the fuel is derived changes. Corn, wheat, and sugar cane are the most commonly used first generation biofuel feed stock.</p> <p>Second Generation Biofuels - They are also known as advanced biofuels. What separates them from first generation biofuels is the fact that feedstock used in producing second generation biofuels are generally not food crops. The only time the food crops can act as second generation biofuels is if they have already fulfilled their food purpose. Jatropha-based biofuels are included here.</p>

	<p>Third Generation Biofuels - The term third generation biofuel refers to biofuel derived from algae. The algae are cultured to act as a low-cost, high-energy and entirely renewable feedstock. It is predicted that algae will have the potential to produce more energy per acre than conventional crops. Algae can also be grown using land and water unsuitable for food production, therefore reducing the strain on already depleted water sources. A further benefit of algae based biofuels is that the fuel can be manufactured into a wide range of fuels such as diesel, petrol and jet fuel.</p> <p>Fourth Generation Biofuels - They include photobiological solar fuels and electro fuels. They do not require the destruction of biomass.</p>	<p>39</p>	<p>B</p> <p>Initially, twelve POPs have been recognized as causing adverse effects on humans and the ecosystem and these can be placed in 3 categories:</p> <p>Pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene;</p> <p>Industrial chemicals: hexachlorobenzene, polychlorinated biphenyls (PCBs);</p> <p>By-products: hexachlorobenzene; polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF), and PCBs.</p>
<p>37</p>	<p>C</p> <p>Bio-magnification is a phenomenon in which the concentration of the pollutant level increases with the increase in the trophic levels in a food chain.</p> <p>Here for a pollutant to intensify in its concentration as it moves up the trophic levels, the following conditions are to be met:</p> <ul style="list-style-type: none"> • Long lived in nature • Less dissolvable in water • Highly soluble in fats • Very mobile in nature 	<p>40</p>	<p>D</p> <p>Major reef formations are observed in the Gulf of Kutch and Gulf of Mannar. Some coral reefs around small inlets in the western part of the Gulf of Khambat have also been observed</p>
<p>38</p>	<p>A</p> <p>Statement 1 is incorrect: Benthic zone refers to the floor of the ocean.</p> <p>Production, in this zone, is limited by low nutrient supply thus 2nd statement is incorrect.</p> <p>Statement 3 is correct. Most of the organisms found here are luminescent. Rooted organisms are sea lilies, sea fan, sponges, etc. Snails and clams are embedded in the mud whereas star fish and sea urchins move on the surface.</p> <p>Other Zones of Ocean Ecosystem are: Littoral zone, Neritic Zone and Pelagic Zone.</p>	<p>41</p>	<p>C</p> <p>Species diversity is defined as the number and abundance of different species that occupy a location. Species diversity increases the number of links in the food web.</p> <p>There can be various reasons for the stability of the ecosystem because of species diversity:</p> <ul style="list-style-type: none"> • Increased food web diversity increases the resilience of the system to outside invasions of exotic organisms and reduces the fluctuation in the population within a given ecosystem. • A large number of interacting feeding links provides alternative channels for energy flow and thus is generated a wide variety of adjustments of the population to environmental changes and stresses within the ecosystem. • Another reason is more stability of a natural ecosystem because as the community succession operates, the homeostasis increases due to more protection available to the members of the community against external environment change.

<p>42</p>	<p>D</p> <p>As per WPA, 1972 only schedule 1 and 2 contain list of species with absolute protection and offence.</p>	
<p>43</p>	<p>D</p> <p>When carbon dioxide dissolves in this ocean, carbonic acid is formed. This leads to higher acidity, mainly near the surface, which has been proven to inhibit shell growth in marine animals and is suspected as a cause of reproductive disorders in some fish. As human activities pump ever-greater quantities of carbon dioxide into the atmosphere, our ocean waters absorb that gas, which results in ocean acidification. Shell-forming animals including corals, oysters, shrimp, lobster, many planktonic organisms, and even some fish species could be gravely affected. This is because numerous marine organisms such as corals, mollusks, crustaceans and seurchins rely on carbonate ions to form their calcareous shells or skeletons in a process known as calcification. Ocean acidification is expected to impact ocean species to varying degrees. Photosynthetic algae and seagrasses may benefit from higher CO2 conditions in the ocean, as they require CO2 to live just like plants on land.</p> <p>Solution to reduce acidification:</p> <p>Seagrass, an organism with "amazing properties": this plant absorbs carbon dioxide, uses it to produce more seagrass and changes the very chemistry of the water around it, reducing the impact of ocean acidification.</p>	<p>Gene Sanctuary: The genetic diversity is sometimes conserved under natural habitat. In other words, areas of great genetic diversity are protected from human interference. These protected areas in natural habitat are referred to as gene sanctuaries. Gene sanctuary is generally established in the centres of diversity or microcenter. Gene sanctuary is Also Known As Natural Park or biosphere reserve. India has setup its first gene sanctuary in the Garo Hills of Assam for wild relatives of citrus. National Citrus Gene Sanctuary-cum- Biosphere Reserve, spread over an area of over 47 sq km, was established with the aim to protect the mother germo plasm of Citrus-indica. It is located in West Garo Hills District of Meghalaya. Efforts are also being made to setup gene sanctuaries for banana, sugarcane, rice and Mango. The National Citrus Gene Sanctuary-cum- Biosphere Reserve is around 4 km from Daribokgre village. It is well connected to Tura.</p> <p>Zoo: A zoo (short for zoological park, zoological garden, or animal park, and also called a menagerie) is a facility in which animals are confined within enclosures, displayed to the public, and in which they may also be bred.</p> <p>Germplasm Bank: Germplasm is the living genetic resources such as seeds or tissue that is maintained for the purpose of animal and plant breeding, preservation, and other research uses. These resources may take the form of seed collections stored in seed banks, trees growing in nurseries, animal breeding lines maintained in animal breeding programs or gene banks, etc. Germplasm collections can range from collections of wild species to elite, domesticated breeding lines that have undergone extensive human selection.</p>
<p>44</p>	<p>B</p> <p>Botanical Garden: A botanical garden or botanic garden is a garden dedicated to the collection, cultivation and display of a wide range of plants labelled with their botanical names. It may contain specialist plant collections such as cacti and succulent plants, herb gardens, plants from particular parts of the world, and so on; there may be greenhouses, shadehouses, again with special collections such as tropical plants, alpine plants, or other exotic plants.</p>	<p>45</p> <p>B</p> <p>Hope Spots are special places that are critical to the health of the ocean. A hope spot is an area of an ocean that needs special protection because of its wildlife and significant underwater habitats. These are</p>

	<p>declared by the International Union for Conservation of Nature (IUCN) and Mission Blue, an organization involved in the study of oceans.</p> <p>Andaman and Nicobar Islands and Lakshadweep islands, the two group of islands, considered extremely rich in marine biodiversity, are the first places in India to have been added in the list of global 'hope spots'.</p>		<p>bonds. In 2015, EXIM bank launched India's first dollar denominated green bond of \$500 million. India has become the seventh largest green bond market in the world. In January 2016, SEBI also released first Green Bond guidelines relating to listings, norms for raising money etc.</p>
46	<p>C</p> <p>Ethanol blending is the practice of blending petrol with ethanol. Many countries, including India, have adopted ethanol blending in petrol in order to reduce vehicle exhaust emissions and also to reduce the import burden on account of crude petroleum from which petrol is produced. It is estimated that a 5% blending (105 crore litres) can result in replacement of around 1.8 million Barrels of crude oil. In India, ethanol is mainly derived by sugarcane molasses, which is a by-product in the conversion of sugar cane juice to sugar. Government has mandated 5% blending of ethanol with petrol on an all-India basis in November 2006. As per National Policy on Bio-fuels, announced in December 2009, oil companies were required to sell petrol blended with at least 5% of ethanol. It proposed that the blending level be increased to 20% by 2017. However, as per the estimates given in Auto Fuel Vision and Policy 2025 issued in May 2014, blended petrol is available only in 13 states and the average blend is 2%. Therefore, all statements are correct.</p>	48	<p>B</p> <p>1 is correct. Chemical pesticides contaminate the ground water thus polluting the primary source of drinking water. Use of biopesticides prevents water pollution.</p> <p>2 is correct. Use of chemical pesticides and fertilizers lead to deterioration of soil quality. Biopesticides prevent this.</p> <p>3 is incorrect. Slow action on pests is the main characteristic of biopesticides. It is one of the main disadvantages of biopesticides</p>
47	<p>A</p> <p>A bond is a debt instrument with which an entity raises money from investors. The capital for green bond is raised to fund 'green' projects like renewable energy, emission reductions etc. First Green Bond was issued by World Bank in 2007.</p> <p>Indian Renewable Energy Development Agency Ltd has issued bonds to finance renewable energy without the tag of green</p>	49	<p>A</p> <p>Ecotones often have a larger number of species and larger population densities than the communities on either side. This tendency for increased biodiversity within the ecotone is referred to as the "edge effect." Those species which occur primarily or most abundantly in the ecotones are called "edge" species. Although ecotones support an increase in density for some species, other species need interior habitat blocks to survive and show avoidance or poor survival on edges. An increase in anthropogenic fragmentation of landscapes creates more ecotones, which may result in an increased occurrence of edge species while simultaneously resulting in increased negative effects for interior species.</p>
		50	<p>B</p> <p>Ranthambore National Park: Park lies at the edge of a plateau, and is bounded by north by Banas river and in south by Chambal river. Ranthambore Tiger Reserve located at the junction of the Aravalis and the Vindhyas. It is site of one of the largest Banyan Tree in India at Jogi Mahal. The Park is under Project Tiger also. An</p>

	important geological feature the 'Great Boundary Fault' where the Vindhya plateaus meet the Aravali hill ranges, meanders through the Reserve.		ecological health of rivers. Most of the urban lakes in the country are also facing similar challenges.
51	D There are six kinds of wetlands: 1. Marine or coastal wetlands which includes lagoons, rocky shores, and coral reefs. 2. Estuarine wetlands including deltas, tidal marshes and mangrove swamps 3. Lacustrine wetlands associated with lakes 4. Riverine wetlands along rivers and streams 5. Palustrine wetlands, essentially marshes, swamps and bogs. 6. Man-made wetlands like fish, shrimp and farm ponds, irrigated agricultural land, salt pans, reservoirs, gravel pits and canals.		Non-point sources: These are non-measurable sources of pollution such as run-off from agricultural fields carrying chemicals and fertilizers, run-off from solid waste dumps and areas used for open defecation, dumping of un-burnt/half-burnt dead bodies and animal carcasses, dhobi ghats, cattle wallowing, etc. Out of the total measurable pollution in the rivers from various point sources, around 75% is contributed by municipal sewage from towns located along the banks of rivers and remaining 25% by industrial effluents.
52	D Nitrogen oxide is a green house gas, released from fossil fuel burning, waster water treatment, gas combustion, fertilization etc. The nitrogen oxides originate from microbes in the soil that feed on inorganic forms of nitrogen, such as the ammonium and nitrate found in chemical fertilizers. They release nitrogen monoxide as waste, which rises from the soil to be oxidized into nitrogen dioxide the single largest source of nitrogen oxides was fuel combustion, accounting for 64% of the total emissions.	54	D GRIHA is a rating tool that helps people assesses the performance of their building against certain nationally acceptable benchmarks. It evaluates the environmental performance of a building holistically over its entire life cycle, thereby providing a definitive standard for what constitutes a 'green building'. The rating system, based on accepted energy and environmental principles, will seek to strike a balance between the established practices and emerging concepts, both national and international. GRIHA was conceived by TERI and developed jointly with Ministry of New and Renewable Energy. GRIHA is a voluntary building rating system that has been instrumental in raising awareness and popularizing green design. It has not been made mandatory . This tool, by its qualitative and quantitative assessment criteria, is able to 'rate' a building on the degree of its 'greenness'.
53	C Point sources: These are organized sources of pollution where the pollution load can be measured, e.g. surface drains carrying municipal sewage or industrial effluents, sewage pumping stations and sewerage systems, trade effluents from industries, etc. Pollution loads due to untreated sewage is one of the main reasons threatening the	55	B A halophyte is a plant that grows in waters of high salinity, coming into contact with saline water through its roots or by salt spray, such as in saline semi-deserts, mangrove swamps, marshes and sloughs and seashores.

<p>Prop and stilt roots: These are large pillar like roots developing from horizontally spread branches of a tree. They grow vertically downward and enter the soil. These are commonly seen in mangroves.</p> <p>Pneumatophores: Pneumatophores are erect roots that are some form of upward appendage or extension of the underground root system. Because these roots are exposed at least part of the day and not submerged underwater, the root system can obtain oxygen in an otherwise anaerobic substrate.</p> <p>Vivipary: Vivipary is the condition whereby the embryo (the young plant within the seed) grows first to break through the seed coat then out of the fruit wall while still attached to the parent plant.</p> <p>Sunken stomata: A sunken stomata is a stomata in a small pit, which protects the escaping water vapor from air currents, decreasing water loss from the leaf. Sunken stomata are commonly found in plants in arid environments as one of their adaptations to preserve water. Plants with sunken stomata often have fewer stomata in general than plants in moister environments. It is a feature observed in xerophytes.</p>	<p>57. C</p> <p>Mercury is one of the deadly components of the ever-increasing e-waste being generated across the world. More than 22% of it used in the manufacturing of the electrical and electronic components. The most effected by mercury contamination are foetus and neo-natals.</p>
<p>56 A</p> <p>Ecotones often have a larger number of species and larger population densities than the communities on either side. This tendency for increased biodiversity within the ecotone is referred to as the "edge effect." Those species which occur primarily or most abundantly in the ecotones are called "edge" species. Although ecotones support an increase in density for some species, other species need interior habitat blocks to survive and show avoidance or poor survival on edges. An increase in anthropogenic fragmentation of landscapes creates more ecotones, which may result in an increased occurrence of edge species while simultaneously resulting in increased negative effects for interior species.</p>	<p>58 B</p> <p>Homeostatis is the process by which an organism maintains the constancy of its internal environment despite varying external environmental conditions</p>
	<p>59 C</p> <p>The Bombay Natural History Society, founded on 15 September 1883, is one of the largest non-governmental organisations in India engaged in conservation and biodiversity research. It supports many research efforts through grants and publishes the Journal of the Bombay Natural History Society. The society is commonly known by its initials, BNHS.</p> <p>Mission: Conservation of Nature, primarily Biological Diversity through action based on Research, Education and Public Awareness.</p> <p>Vision: Premier independent scientific organization with a broad based constituency, excelling in the conservation of threatened species and habitats. It also organizes natural trails and camps for general public to create awareness among them.</p>
	<p>60 B</p> <p>Taiga biome consists of coniferous evergreen vegetation. Lichen and mosses belong to Tundra Biome.</p>
	<p>61 B</p> <p>The Great Barrier Reef is a very long ridge like feature located off the north-east coast of Australia. It has been formed as a result of the deposition of skeletons of corals. It is a World Heritage Site. Coral Reefs - When the corals die their hard skeletons remains fixed in place and new corals grow upon</p>

	<p>them. These large accumulations of skeletons of corals are known as Coral Reefs. Coral Triangle - The Coral Triangle covers Indonesia, Malaysia, Papua New Guinea, the Philippines, The Solomon Islands, and East Timor and contains nearly 30 percent of the world's reefs and more than 3,000 species of fish. It is more biodiverse than the Great Barrier Reef.</p>		<p>that inhibits the increase in number of the population. These factors include unfavourable climatic conditions; lack of space, light, or a suitable substrate; deficiencies of necessary chemical compounds or minerals; and the inhibiting effects of predators, parasites, disease organisms, or unfavourable genetic changes.</p>
62	<p>B</p> <p>Great Indian Bustard is found Gujarat, Rajasthan and surrounding area, facing stress due to habitat destruction.</p>	65	<p>B</p> <p>Eight Missions outlined under the National Action Plan on Climate Change (NAPCC) are:</p> <p>National Solar Mission: The plan includes: Specific goals for increasing use of solar thermal technologies in urban areas, industry, and commercial establishments; a goal of increasing production of photo-voltaic to 1000 MW/year; and a goal of deploying at least 1000 MW of solar thermal power generation.</p> <p>National Mission for Enhanced Energy Efficiency: Building on the Energy Conservation Act 2001, the plan recommends: Mandating specific energy consumption decreases in large energy-consuming industries, with a system for companies to trade energy-savings certificates; Energy incentives, including reduced taxes on energy-efficient appliances.</p> <p>National Mission on Sustainable Habitat: the plan calls for: Extending the existing Energy Conservation Building Code; A greater emphasis on urban waste management and recycling, including power production from waste; Strengthening the enforcement of automotive fuel economy standards and using pricing measures to encourage the purchase of efficient vehicles; and Incentives for the use of public transportation.</p> <p>National Water Mission: With water scarcity projected to worsen as a result of climate change, the plan sets a goal of a 20% improvement in water use efficiency through pricing and other measures.</p>
63	<p>C</p> <p>An ecological niche is the role and position a species has in its environment; how it meets its needs for food and shelter, how it survives, and how it reproduces. A species niche includes all of its interactions with the biotic and abiotic factors of its environment. No two species have identical niches. The term niche differentiation refers to the process by which competing species use the environment differently in a way that helps them to coexist. The competitive exclusion principle states that if two species with identical niches (i.e., ecological roles) compete, then one will inevitably drive the other to extinction. When two species differentiate their niches, they tend to compete less strongly, and are thus more likely to coexist. Species can differentiate their niches in many ways, such as by consuming different foods, or using different parts of the environment.</p>		
64	<p>C</p> <p>Biotic potential, the maximum reproductive capacity of an organism under optimum environmental conditions. It is often expressed as a proportional or percentage increase per year, as in the statement "The human population increased by 3 percent last year. " It can also be expressed as the time it takes for a population to double in size (doubling time). Full expression of the biotic potential of an organism is restricted by environmental resistance, any factor</p>		

	<p>National Mission for Sustaining the Himalayan Ecosystem: The plan aims to conserve biodiversity, forest cover, and other ecological values in the Himalayan region, where glaciers that are a major source of India's water supply are projected to recede as a result of global warming.</p> <p>National Mission for a "Green India": Goals include the afforestation of 6 million hectares of degraded forest lands and expanding forest cover from 23% to 33% of India's territory.</p> <p>National Mission for Sustainable Agriculture: The plan aims to support climate adaptation in agriculture through the development of climate-resilient crops, expansion of weather insurance mechanisms, and agricultural practices.</p> <p>National Mission on Strategic Knowledge for Climate Change: To gain a better understanding of climate science, impacts and challenges, the plan envisions a new Climate Science Research Fund, improved climate modeling, and increased international collaboration. It also encourages private sector initiatives to develop adaptation and mitigation technologies through venture capital funds.</p>	<p>Causes:</p> <p>Because more than half of the surfaces in cities are man-made, cities heat up more than rural areas, where structures are less concentrated</p> <p>Because building a city means replacing vegetation with structures, the city loses the evaporative cooling advantages of vegetation.</p> <p>Cars and air conditioners, which are high in number in urban areas, convert energy to heat and release this heat into the air.</p>
66	<p>B</p> <p>Ecological succession is the sequential development of ecological community or ecosystem. It is characterized by increased productivity, shift of nutrients from the reservoirs, increased diversity of organisms with increased niche development, and a gradual increase in the complexity of food webs.</p>	<p>68 D</p> <ul style="list-style-type: none"> • Fly ash: also know as Pulverised fuel ash is the light weight substance which tend to fly around in hot flue gases. • It includes black soot occurring due to combustion of coal, vapourised particles of lead, cadmium, nickel etc. • Fly ash is actively being used in concrete to enhance its strength. However, it negatively impacts the environment by depositing over snow, thus reducing the albedo and initiating melting. Himalayan ecology in particular is negatively impacted by fly ash.
67	<p>C</p> <p>Temperatures are often a few degrees higher in cities than they are in their surrounding rural areas. This temperature discrepancy is the result of a bizarre phenomenon known as the urban heat island effect.</p>	<p>69 D</p> <p>Arsenic contamination of ground water is being highly reported from the Nadia district area of West Bengal. The highest levels of arsenic reported in drinking water here was found to be 1362 micro grams/litre. The uranium poisoning of ground water was reported in areas of Punjab. Nalgonda region of Telangana is known for its high presence of fluorine content in the ground water.</p> <p>70 C</p> <p>To be declared as a biodiversity hotspot a species should be endemic i.e. found in particular area only, threat perception based on habitat loss is taken into consideration</p>

71	<p>B</p> <p>Unnat Jyoti by Affordable LEDs for All' (UJALA) scheme is an initiative of the Government of India to spread the message of energy efficiency in the country. UJALA scheme aims to promote efficient lighting, enhance awareness on using efficient equipment which reduce electricity bills and help preserve environment. Increasing revenue for the Government through higher electricity bills is not an objective of the scheme. The scheme was initially labelled DELP (Domestic Efficient Lighting Program) and was relaunched as UJALA. The scheme aims to replace 200 million incandescent bulbs with energy efficient LED bulbs. The Electricity Distribution Company and Energy Efficiency Services Limited (EESL), a public sector body of Government of India is implementing the programme.</p>	74	<p>B</p> <p>The eco-sensitive zones of Western Ghats are being declared under Environment Protection act, 1986. Though the act does not mention the word "Eco-Sensitive Zones". However, Section 3(2)(v) of the Act, says that Central Government can restrict areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards. In this regard MoEFCC has initially appointed Dr. Madhav Gadgil committee, which recommended complete declaration of Western Ghats as eco-sensitive area. While, the Kasturi Rangan committee appointed recommended 67% of area to be declared as eco-sensitive zone.</p>
72	<p>D</p> <p>The effect of acid rain on a soil causes shift in the microbial species from algae and bacteria to fungi. As fungi grows in acidic conditions and this causes a disturbance in the micro flora of the soil. The impact of acid rains on Indian soils is very less because majority of the Indian soils are already alkaline in nature, which provides a natural buffering capacity.</p>	75	<p>B</p> <p>Net primary production represents the amount of usable energy at trophic level one, which is available to higher trophic levels. Net Primary Productivity of various ecosystems include:</p> <ol style="list-style-type: none"> 1. Extreme desert, rock and ice - 3 dry grams/ m²/year 2. Desert scrub - 70 dry grams/ m²/year 3. Open Ocean - 125 dry grams/ m²/year 4. Tundra and Alpine - 140 dry grams/ m²/year 5. Tropical rain forests, swamps, marshes and estuaries - 2000 dry grams/ m²/year <p>Whole earth - 320 dry grams/ m²/year.</p>
73	<p>D</p> <p>Global warming and the resulting change in climatic conditions have the potential to affect the agro ecosystems in the following areas:</p> <ul style="list-style-type: none"> o Increase in temperature will increase evaporation. o Cultivable areas will be enlarged. <p>Soil water will become insufficient because of excessive evaporation and transpiration.</p> <p>Water and soil temperatures will rise.</p> <p>Sowing period will shorten.</p> <p>The incidence of insect pests, diseases and weeds will become higher.</p> <p>The activities of microorganisms will increase. The decomposition of organic matter and fertilizers will be promoted.</p> <p>The deterioration of soil quality will be quickened.</p>	76	<p>B</p> <p>Interspecific interactions arise from the interaction of populations of two different species. They could be beneficial, detrimental or neutral (neither harm nor benefit) to one of the species or both. These are Mutualism, Competition, Predation, Parasitism, Commensalism and Amensalism.</p> <p>Commensalism: This is the interaction in which one species benefits and the other is neither harmed nor benefited. The cattle</p>

	<p>egret and grazing cattle in close association, a sight you are most likely to catch if you live in farmed rural areas, is a classic example of commensalism. The egrets always forage close to where the cattle are grazing because the cattle, as they move, stir up and flush out from the vegetation insects that otherwise might be difficult for the egrets to find and catch.</p> <p>Amensalism: Amensalism is any relationship between organisms of different species in which one organism is inhibited or destroyed while the other organism remains unaffected. A common example of amensalism is the release of chemical toxins by plants that can inhibit the growth of other plant species</p> <p>Mutualism: This interaction confers benefits on both the interacting species. The most spectacular and evolutionarily fascinating examples of mutualism are found in plant-animal relationships. Plants need the help of animals for pollinating their flowers and dispersing their seeds. In many species of fig trees, there is a tight one-to-one relationship with the pollinator species of wasp. It means that a given fig species can be pollinated only by its 'partner' wasp species and no other species. The female wasp uses the fruit not only as an oviposition (egg-laying) site but uses the developing seeds within the fruit for nourishing its larvae. The wasp pollinates the fig inflorescence while searching for suitable egg-laying sites. In return for the favour of pollination the fig offers the wasp some of its developing seeds, as food for the developing wasp larvae.</p> <p>Parasitism: It is a relationship between two things in which one of them (the parasite) benefits from or lives off of the other. The most familiar examples of this group are the lice on humans and ticks on dogs.</p>
<p>77 A</p> <p>Nutrient Cycles are of two types: (a) gaseous and (b) sedimentary. The reservoir for gaseous type of nutrient cycle (e.g., nitrogen, carbon cycle) exists in the atmosphere</p>	<p>and for the sedimentary cycle (e.g., sulphur and phosphorus cycle), the reservoir is located in Earth's crust. The function of the reservoir is to meet with the deficit which occurs due to imbalance in the rate of influx and efflux and therein lies the difference between Carbon and Phosphorus Cycle. Unlike carbon cycle, there is no respiratory release of phosphorus into atmosphere. Also, atmospheric inputs of phosphorus through rainfall are much smaller than carbon inputs and Gaseous exchanges of phosphorus between organism and environment are negligible compared to carbon.</p> <p>78 C</p> <p>Clean Energy Cess, now renamed Clean Environment Cess, is a kind of carbon tax (a tax levied on the carbon content of fuels) and is levied in India as a duty of Excise on Coal, Lignite and Peat (goods specified in the Tenth Schedule to the Finance Act, 2010). The fund raised through the cess is being used for the National Clean Energy Fund for funding research and innovative projects in clean energy technologies or renewable energy sources to reduce dependence on fossil fuels. Thus, projects aiming at reduction of emissions with innovative technologies from different sectors get considered under this funding mechanism.</p> <p>79 D</p> <p>Epiphytes are plants that grow upon another plant or object merely for physical support. They are not parasitic on the supporting plants and they produce their own energy from photosynthesis and obtain moisture and nutrients from the air. They do not damage a host directly, although their attachment roots and bulk can eventually 'strangle' or topple large trees. Mosses, ferns, and liverworts are also common epiphytes and are found in both tropical and temperate regions. Therefore, all statements are correct.</p>

<p>80</p>	<p>B</p> <p>Ministry of New and Renewable Energy has been vested with the responsibility of developing Small Hydro Power (SHP) Small Hydro Power (SHP) projects are up to 25 MW station capacities. The estimated potential for power generation in the country from such plants is about 20,000 MW. Most of the potential is in Himalayan States as river-based projects and in other States on irrigation canals. The SHP programme is now essentially private investment driven. Projects are normally economically viable and private sector is showing lot of interest in investing in SHP projects. It has been recognized that small hydropower projects can play a critical role in improving the overall energy scenario of the country and in particular for remote and inaccessible areas. Potential: An estimated potential of about 20,000 MW of small hydro power projects exists in India. Ministry of New and Renewable Energy has created a database of potential sites of small hydro and 6,474 potential sites with an aggregate capacity of 19,749.44 MW for projects up to 25 MW capacity have been identified.</p>	<p>82</p> <p>C</p> <p>PM2.5 and PM10 comprises of solid particles or liquid droplets with less than 2.5 micrometer and 10 micrometer respectively .They can remain suspended in air for weeks unlike other particles of size greater than 10 micrometer which remain suspended only for a day. Their presence at lower atmosphere causes respiratory ailments like asthma etc. At upper atmosphere they tend to alter the radiation and thermal budget of the atmosphere by reflecting sun's rays. This results in lowering of the temperature at the surface of the earth. (Statement 3 incorrect)</p>
<p>81</p>	<p>D</p> <p>IMO - the International Maritime Organization - is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. Established: 1948 in Geneva and came into force in 1959. Headquarter: London, United Kingdom. India was one of the earliest members of the IMO and had joined it as a member-state in 1959. Functions: To develop and maintain a comprehensive regulatory framework for shipping and its remit. This framework should address various areas like safety, legal matters, environmental concerns, technical co-operation, maritime security and efficiency of shipping. IMO Council: Consist of 40 member countries who are elected by the IMO Assembly. It plays a crucial role in deciding various matters related to global shipping industry.</p>	<p>83</p> <p>C</p> <p>Minamata disease is a neurological syndrome caused by severe mercury poisoning. It is caused due to consumption of mercury. Mercury poisoning due to consumption of fish captured from mercury contaminated Minamata Bay in Japan was detected in 1952.</p> <p>Itai-itai disease is caused by Cadmium pollution. It is also called Ouch-Ouch disease.</p> <p>The term "itai-itai disease" was coined by locals for the severe pains victims felt in the spine and joints. Cadmium poisoning can also cause softening of the bones and kidney failure.</p> <p>Methaemoglobinemia or Blue baby Syndrome is widely believed to be caused by nitrate contamination in groundwater resulting in decreased oxygen carrying capacity of hemoglobin in babies leading to death. The groundwater can be contaminated by leaching of nitrate generated from fertilizer and chemicals used in agricultural lands, waste dumps or pit latrines.</p> <p>While prolonged exposure to Arsenic causes Black Foot Disease. Blackfoot disease (BFD) is a severe form of peripheral vascular disease (PVD), in which the blood vessels in the lower limbs are severely damaged.</p>

<p>84</p>	<p>B</p> <p>National Air Quality Index:</p> <p>There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe.</p> <p>The AQI considers eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb) for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed.</p>	<p>of POPs. The Stockholm Convention is the most significant global legally binding instrument for targeting POPs. The United Nations Environment Programme (UNEP) coordinated the organisation of the Stockholm Convention, which was originally signed by 92 nations and the European Community on the 23 May 2001 in Stockholm, Sweden.</p>
<p>85</p>	<p>D</p> <p>Acid rain is a mixture of deposited material, both wet and dry, contributed by more than normal amounts of nitric and sulphuric acids. Acidity is determined on the basis of the pH level of the water droplets. Normal rain water is slightly acidic with a pH range of 5.3-6.0, because carbon dioxide and water present in the air react together to form carbonic acid, which is a weak acid. When the pH level of rainwater falls below this range, it becomes acid rain. Erupting volcanoes contains some chemicals that can cause acid rain. Apart from this, burning of fossil fuels, running of factories and automobiles due to human activities are few other reasons behind this activity.</p>	<p>87</p> <p>C</p> <p>Seaweed refers to several species of macroscopic, multicellular, marine algae. The term includes some types of red, brown, and green algae. Two specific environmental requirements dominate seaweed ecology. These are the presence of seawater (or at least brackish water) and the presence of light sufficient to drive photosynthesis. These are one of the major sources of Iodine supply. Seaweeds, in general have multiple uses like food (both animals and humans), medicinal properties, fertilizer etc. The major threats for seaweed growth and survival are eutrophication, siltation, drilling etc. It's growth or change in colour are major indications of high metallic pollution in the sea waters.</p>
<p>86</p>	<p>C</p> <p>The Stockholm Convention is a global treaty to protect human health and the environment from persistent organic pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife. The Stockholm Convention focuses on eliminating or reducing releases of 12 POPs, the so-called "Dirty Dozen" i.e. Aldrin, Chlordane, DDT, Dieldrin, Dioxins, Endrin, Furans, Hexachlorobenzene, Heptachlor, Mirex, PCBs and Toxaphene. At its fourth meeting nine new persistent organic pollutants were added to the list. Further at its fifth meeting, the convention included endosulfan and related polymers to its list</p>	<p>88</p> <p>D</p> <p>Biosphere reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. It is divided into core, buffer and transition zone. The human intervention is limited to buffer zone only. The transition zone is a zone of active cooperation between management and local people.</p> <p>Statement 1 is not correct. Unlike national parks and sanctuaries which focus on the habitat of some species or on a single species, the biosphere reserve takes into consideration the entire ecosystem. Statement 2 is not correct. Biosphere reserves are demarcated into following 3 inter-related zones:</p> <p>Core Zone: Core zone must contain suitable habitat for numerous plant and animal species, including higher order preda-</p>

<p>tors and may contain centres of endemism. Core areas often conserve the wild relatives of economic species and also represent important genetic reservoirs having exceptional scientific interest. A core zone being National Park or Sanctuary/protected/regulated mostly under the Wildlife (Protection) Act, 1972. Whilst realizing that perturbation is an ingredient of ecosystem functioning, the core zone is to be kept free from human pressures external to the system.</p> <p>Buffer Zone: The buffer zone, adjoins or surrounds core zone, uses and activities are managed in this area in the ways that help in protection of core zone in its natural condition. These uses and activities include restoration, demonstration sites for enhancing value addition to the resources, limited recreation, tourism, fishing, grazing, etc; which are permitted to reduce its effect on core zone. Research and educational activities are to be encouraged. Human activities, if natural within BR, are likely to continue if these do not adversely affect the ecological diversity.</p> <p>Transition Zone:The transition area is the outermost part of a biosphere reserve. This is usually not delimited one and is a zone of cooperation where conservation knowledge and management skills are applied and uses are managed in harmony with the purpose of the biosphere reserve. This includes settlements, crop lands, managed forests and area for intensive recreation and other economic uses characteristics of the region.</p>	<p>90 D</p> <p>Tropical Dry Evergreen Forests: These are found along the coasts of Tamil Nadu which receive annual rainfall of about 100 cms mostly from the North-East monsoon winds in October- December.</p> <p>Alpine Forests: They occur all along the Himalayas at altitudes ranging between 2900 to 3500 m.</p> <p>Tropical Wet Evergreen Forests: These grow in areas where the annual rainfall exceeds 250 cms. They are found along the western side of Western Ghats and A&N Islands. Therefore, (d) is the correct answer.</p>
<p>89 B</p> <p>The major tropical grasslands are the campos of Brazil, the llanos of Venezuela and the Savannas of Africa. Selvas are the tropical rainforests of the Amazon basin. The mid-latitude or temperate grass lands include the Prairies of North America, Pampas of South America, the Pustaz of Hungarian plains, Steppes in Asia, Velds in South Africa and Downs in the Murry-Darlin basin of Australia.</p>	<p>91 B</p> <p>The Main Ozone-Depleting Substances (ODS) Chlorofluorocarbons (CFCs) The most widely used ODS, accounting for over 80% of total stratospheric ozone depletion. Used as coolants in refrigerators, freezers and air conditioners in buildings and cars manufactured before 1995. Found in industrial solvents, dry-cleaning agents and hospital sterilants. Also used in foam products - such as soft- foam padding (e.g. cushions and mattresses) and rigid foam (e.g. home insulation). Halons (brominated fluorocarbons) Used in some fire extinguishers, in cases where materials and equipment would be destroyed by water or other fire extinguisher chemicals. In B.C., halons cause greater damage to the ozone layer than do CFCs from automobile air conditioners. Methyl Chloroform Used mainly in industry - for vapour degreasing, some aerosols, cold cleaning, adhesives and chemical processing. Carbon Tetrachloride Used in solvents and some fire extinguishers. Hydrochlorofluorocarbons (HCFCs) HCFCs have become major, "transitional" substitutes for CFCs. They are much less harmful to stratospheric ozone than CFCs are. But HCFCs they still cause some ozone destruction and are potent greenhouse gases. Hydrofluorocarbons (HFCs) are being developed to replace CFCs and HCFCs, for uses such as vehicle air conditioning. HFCs do not deplete ozone, but they are strong greenhouse gases. CFCs are even more powerful contributors to global climate change, though, so HFCs are still the better option until even safer substitutes are discovered.</p>

<p>92</p>	<p>A</p> <p>Ambient air quality refers to the condition or quality of air surrounding us in the outdoors. National Ambient Air Quality Standards are the standards for ambient air quality set by the Central Pollution Control Board (CPCB) that is applicable nationwide. The CPCB has been conferred this power by the Air (Prevention and Control of Pollution) Act, 1981. Pollutants: Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂), PM₁₀, PM_{2.5}, Ozone, Lead, Carbon Monoxide, Ammonia, Benzene, Benzo (a)Pyrene (BaP)-particulate phase only, Arsenic, Nickel. National Air Quality Index: It is released by The Central Pollution Control Board. It determines pollution of 8 pollutants: Particulate Matter (PM 2.5), Sulphur Dioxide (SO₂), Nitrogen Dioxide(NO₂), Carbon Monoxide (CO), Ozone(O₃) Ammonia (NH₃) and Lead (Pb). The pollution is described with the help of Colour and into 6 categories: Good, Satisfactory, Moderately polluted, Poor, Very Poor and Severe. Thus Benzene, Benzo(a) Pyrene (BaP)- particulate phase only, Arsenic, Nickel are not considered for National Air Quality Index.</p>	<p>94</p>	<p>D</p> <p>Coniferous trees are Chir, Pine and Deodar. Thorny Cactus, khair babol, keekar are important arid and semi arid vegetation. Mangrove forest Sundari is a well-known species of trees in mangrove forests after which Sunderbans have been named.</p> <p>Important trees of Tropical Deciduous forests are sal, teak, peepal, neem and shisham.</p>
<p>93</p>	<p>A</p> <p>The UNFCCC is a "Rio Convention", one of three adopted at the "Rio Earth Summit" in 1992. Its sister Rio Conventions are the UN Convention on Biological Diversity and the Convention to Combat Desertification.</p> <p>The treaty itself is not legally binding as it does not set mandatory limits on greenhouse gas emissions for individual countries and doesn't contain any enforcement mechanisms.</p> <p>The ultimate objective of the Convention is to "stabilise (and not eliminate) greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system." It states that "such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."</p>	<p>95</p>	<p>C</p> <p>The main steps in the Environment Impact Assessment (EIA) process are:</p> <ol style="list-style-type: none"> 1. Screening 2. Scoping 3. Prediction and Mitigation 4. Management and Monitoring 5. Audit <p>Screening often results in a categorization of the project and from this a decision is made on whether or not a full EIA is to be carried out. Scoping is the process of determining which are the most critical issues to study and will involve community participation to some degree. It is at this early stage that EIA can most strongly influence the outline proposal. Detailed prediction and mitigation studies follow scoping and are carried out in parallel with feasibility studies. The main output report is called an Environmental Impact Statement, and contains a detailed plan for managing and monitoring environmental impacts both during and after implementation. Finally, an audit of the EIA process is carried out some time after implementation. The audit serves a useful feedback and learning function.</p>
		<p>96</p>	<p>C</p> <p>Installed capacity(%) of various energy sources:</p> <ul style="list-style-type: none"> Coal - 56% Hydro-electric - 20% Natural gas - 9% Nuclear - 2% Renewable energy - 12% Diesel - 1%

97.	<p>A</p> <p>Red Sanders, botanical name <i>Pterocarpus santalinus</i>, is a non-fragrant variety of sandalwood that mostly grows in rocky, hilly regions. Geographically, it is located only in a small pocket roughly 5,200 sq km in the Palakonda and Seshachalam hills in the districts of Kadapa and Chittoor, in some contiguous areas of Anantapur district, in the Nallamalla forests in Kurnool and Prakasam, and in parts of Nellore district. Some contiguous patches in Tamil Nadu and Karnataka see some wild growth. Hence, statement 1 is correct. This tree is valued for the rich red color of its wood. However, the wood is not aromatic. There is big demand overseas, especially in China and Japan, where Red Sanders furniture, chess sets and musical instruments are status symbols. Hence, statement 2 is incorrect. It is found in the thorny scrub/dry deciduous forests of the central Deccan, between 500 ft and 3000 ft. Hence, statement 3 is incorrect.</p>	<p>expenditures, assess their financial needs in the medium term and identify the most suitable finance solutions to bridge their national biodiversity finance gaps. Available evidence and the decisions adopted by Parties to the Convention on Biological Diversity (CBD) indicate that a significant gap remains in finance for biodiversity management, for countries to drastically scale up their efforts and achieve the 20 Aichi Targets defined in the CBD's Strategic Plan for 2011-2020. In this context, UNDP in October 2012 launched the Biodiversity Finance Initiative - BIOFIN, as a new global partnership seeking to address the biodiversity finance challenge in a comprehensive manner - building a sound business case for increased investment in the management of ecosystems and bio diversity. BIOFIN is managed by the UNDP Ecosystems and Biodiversity Programme, in partnership with the European Union and the Governments of Germany and Switzerland. India is also a part of this initiative. For the purpose of implementing BIOFIN project in India, the Ministry of Environment, Forest and Climate Change has identified National Biodiversity Authority (NBA) as the host organisation.</p>
98	<p>C</p> <p>Grazing food chain begins with producers, present at the first trophic level. The plant biomass is then consumed by herbivores, which in turn are consumed by a variety of carnivores. In an aquatic ecosystem, grazing food chain is the major conduit for energy flow. Detritus food chain begins with detritus such as dead bodies of animals or fallen leaves, which are then broken down into simple, inorganic material by decomposers or detritivores. In a terrestrial ecosystem, detritus food chain is the major conduit for energy flow. Unlike in grazing web, all sub soil organisms are included in detritus food chain.</p>	<p>100 C</p> <p>The National Solar Mission (NSM) launched in January 2010, is a major initiative of the Government of India involving States, R&D institutions, and industries to promote solar energy while addressing energy security and climate change challenges of the country. Thus, it will constitute a major contribution by India to the global effort to meet the challenges of climate change. The Mission is one of the several initiatives that are a part of National Action Plan on Climate Change (NAPCC). The Union Cabinet recently gave its approval for stepping up of India's solar power capacity target under the Jawaharlal Nehru National Solar Mission (JNNSM) by five times, reaching 1,00,000 MW (100 GW) by 2022.</p>
99	<p>B</p> <p>BIOFIN is a global partnership addressing the biodiversity finance challenge in a comprehensive manner. The Initiative provides an innovative methodology enabling countries to measure their current biodiversity</p>	<p><i>For further clarifications and feedback feel free to write to us at "testseriesrcr@gmail.com"</i></p>