PNS School of Engineering & Technology

Nishamani Vihar, Marshaghai, Kendrapara

Internal Assessment Examination-2022(3rd Semester)

Subject : Th-5 -Environmental Studies

Branch : Comp.Sc, Electrical & ETC Engineering

Time : $1\frac{1}{2}$ Hours F.M. : 20

1. Answer all the following questions. [2 x 5]

(a) What is green marketing ?

(b) What are the needs of public awareness to make healthy environment ?

(c) Define renewable and non-renewable resources with example.

(d) What are the minerals found in India ?

(e) What is ecosystem ?

2. Answer the following question (any Two) [5 x 2]

(a) Explain about forest resources of our environment.

(b) Explain about water resources of our environment.

(c) Explain the producer, consumer and decomposer of our environment with example.

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ANSWER

1(a) Green marketing refers to the practice of developing and advertising products based on their real or perceived environmental sustainability.

1(b) Needs of public awareness to make healthy environment

- Conservation of nature and natural resources for the betterment of the society.
- Protection of various species for ecological balance.
- Adoption of appropriate means to solve existing environmental problems.

1(c) Renewable resources may be defined as resources that have the potential to be replaced over time by natural processes. Ex – Solar energy

Nonrenewable resources may be defined as resources whose stock or reserves is limited or fixed. Ex - Coal

1(d) Minerals found in India are Iron, Coal, Bauxite, Chromite, and Manganese.

1(e) An ecosystem is that it is a community or group of living organisms that live in and interact with each other in a specific environment.

2(a) Forest Resources - Forest is important renewable resources. Forest vary in composition and diversity and an contribute substantially to the economic development of any country .Plants along with trees cover large areas, produce variety of products and provide food for living organisms, and also important to save the environment. It is estimated that about 30% of world area is covered by forest whereas 26% by pastures. Among all continents, Africa has largest forested area (33%) followed by Latin America (25%), whereas in North America forest cover is only 11%. Asia and former USSR has 14% area under forest. European countries have only 3% area under forest cover. India's Forest Cover accounts for 20.6% of the total geographical area of the country as of 2005.

Significance of forests.

Forest can provide prosperity of human being and to the nations. Important uses of forest can be classified as under

- Commercial values
- Ecological significance
- Aesthetic values
- Life and economy of tribal

Commercial values

Forests are main source of many commercial products such as wood, timber, pulpwood etc. About 1.5 billion people depend upon fuel wood as an energy source. Timber obtained from the forest can used to make plywood, board, doors and windows, furniture, and agriculture implements and sports goods. Timber is also a raw material for preparation of paper, rayon and film. Forest can provide food , fibre, edible oils and drugs. Forest lands are also used for agriculture and grazing. Forest is important source of development of dams, recreation and mining.

Life and economy of tribal:

Forest provide food, medicine and other products needed for tribal people and play a vital role in the life and economy of tribes living in the forest.

Ecological uses:

Forests are habitat to all wild animals, plants and support millions of species. They help in reducing global warming caused by greenhouse gases and produces oxygen upon photosynthesis. Forest can act as pollution purifier by absorbing toxic gases. Forest not only helps in soil conservation but also helps to regulate the hydrological cycle.

Aesthetic values:

All over the world people appreciate the beauty and tranquillity of the forest because forests have a greatest aesthetic value. Forest provides opportunity for recreation and ecosystem research.

Water is an indispensable resource for life on earth. Approximately 70.8 % surface of earth is covered with water in the form of oceans. Out of this, about 97% is not fit for human consumption, about 2% is locked as a glacier and only less than 1% available as fresh water that can be used for human consumption and other uses.

2(b) Water Resources - Water is an indispensable resource for life on earth. Approximately 70.8 % surface of earth is covered with water in the form of oceans. Out of this, about 97% is not fit for human consumption, about 2% is locked as a glacier and only less than 1% available as fresh water that can be used for human consumption and other uses.

Water is a very important source and essential for life because it has very unique characteristic such as water exists as liquid over a wide range of temperature 0-1000C with highest specific heat and latent heat of vaporization. Water is excellent solvent and act as carrier of nutrient and helps to distribute them to the cells in the body, regulates the body temperature and support structure and can dissolve various pollutant and can act as carrier of large number of microorganisms. It is responsible for hydrological cycle which acts as resource of water to the earth. It is estimated that about 1.4 inch thick layer of water evaporates and majority of water returns to earth through hydrological cycle.

More than 99% of earth water is unavailable for use; only 1% water is available for people, animal, plants and earth. There is an uneven distribution of water resources, tropical rain forest are receive maximum rainfall where as desert receive only little rainfall. Due to its unique properties water is of multiple uses for all living organisms. Water is absolutely essential for all the living organisms. One can survive for weeks without food but cannot survive more than a few days without water. Since the earliest days of mankind water availability was the major factor to decide the place of human settlements. Water dissolves nutrients and distributes them in different parts of plants and regulates the temperature and removes the waste.

2(c) Producers:

Producers are organisms that produce food for themselves and other organisms. They use energy and simple inorganic molecules to make organic compounds. The stability of producers is vital to ecosystems because all organisms need organic molecules. Producers are also called autotrophs. There are two basic types of autotrophs: photoautotrophs and chemoautotrophs.

Photoautotrophs use energy from sunlight to make food by photosynthesis. They include plants, algae, and certain bacteria (see Figure below).

Chemoautotrophs use energy from chemical compounds to make food by chemosynthesis. They include some bacteria and also archaea. Archaea are microorganisms that resemble bacteria.

Consumers:

Consumers are organisms that depend on other organisms for food. They take in organic molecules by essentially "eating" other living things. They include all animals and fungi (fungi don't really "eat"; they absorb nutrients from other organisms). They also include many bacteria and even a few plants, such as the pitcher plant. Consumers are also called heterotrophs. Heterotrophs are classified by what they eat:

Herbivores consume producers such as plants or algae. They are a necessary link between producers and other consumers. Examples include deer, rabbits, and mice.

Carnivores consume animals. Examples include lions, polar bears, hawks, frogs, salmon, and spiders. Carnivores that are unable to digest plants and must eat only animals are called obligate carnivores. Other carnivores can digest plants but do not commonly eat them.

Omnivores consume both plants and animals. They include humans, pigs, brown bears, gulls, crows, and some species of fish.

Decomposers:

When organisms die, they leave behind energy and matter in their remains. Decomposers break down the remains and other wastes and release simple inorganic molecules back to the environment. Producers can then use the molecules to make new organic compounds. The stability of decomposers is essential to every ecosystem. Decomposers are classified by the type of organic matter they break down:

Scavengers consume the soft tissues of dead animals. Examples of scavengers include vultures, raccoons, and blowflies.

Detritivores consume detritus—the dead leaves, animal feces, and other organic debris that collects on the soil or at the bottom of a body of water. On land, detritivores include earthworms, millipedes, and dung beetles (see Figure below). In water, detritivores include "bottom feeders" such as sea cucumbers and catfish.

Saprotrophs are the final step in decomposition. They feed on any remaining organic matter that is left after other decomposers do their work. Saprotrophs include fungi, bacteria, and single-celled protozoa. Fungi are the only organisms that can decompose wood.