



SHIKSHA CLASSES

Answer Paper

Sub. : Science

17. Man made Materials

Marks : 20

Std. : VIIIth - S.B.

18. Ecosystems

Q.1(A) : Choose the correct alternative

2

1) Thermocoal melts at °C.

Ans : a) More than 100° C

2) Air, water, minerals, soil are factors of an ecosystem.

Ans : b) physical

Q.1(B) : Solve any one of the following question

1

1) Find the odd one out:

Polyvinyl chloride, Polystyrene, Polypropylene, Polyurethane.

Ans : Polyurethane (All others are thermoplastic materials, polyurethane is thermosetting plastic.)

2) Correct the following statements by changing one or two words

Specific ecosystem developed in a vast area is called a biosphere.

Ans : Specific ecosystem developed in a vast area is called a **Biome**

3) Considering the relationship in the first pair, complete the second pair:

Processed glass: Fen glass : : Alkali silicate glass :

Ans : Water glass

Q.2(A) : Give reason (Any One)

2

1) Plants in an ecosystem are called producers.

Ans : Plants are considered producers since they can produce their own food from non-living sources through a process known as photosynthesis. In photosynthesis, plants use sunlight and carbon dioxide to produce organic compounds. These organic compounds become the energy source for many other organisms within an ecosystem.

2) Most of domestically useful items are replaced by plastic.

Ans : Plastic is lighter and unbreakable. The handling thus becomes easier. It is non-corrosive, hence pickles, spices, etc. can be stored in plastic containers. It is cheaper as compared to the metal and glass articles. Thus, it becomes popular with general public. It is easier to wash and maintain the plastic articles. These are some of the reasons of making plastic a domestically useful material.

Q.2(B): Solve any two of the following question.

4

1) Make list about use of thermocol in your daily life.

- Ans :** 1) Decorative items used at the time of festivals.
2) Packing materials.
3) Insulating boxes to keep food warm.
4) Insulating boxes to keep fish in iced condition to prevent decomposition.
5) Thermocol beads in the bean bags.

2) What are the reasons for war?

- Ans :** Wars can occur due to various reasons like differences and competition over land, water, mineral resources. It can also occur due to economic and political reasons.

3) Write the properties of glass.

- Ans :** The glass becomes soft on heating and thus can be moulded into desired shape.
- 1) According to ingredients added at the time of preparation of glass, its density changes accordingly.
 - 2) Glass is slow conductor of heat. If a cold glass is quickly heated, it cracks suddenly. Similarly, the warm glass if exposed to sudden cooling, it too cracks.
 - 3) Glass is a bad conductor of electricity. Therefore, it is used as insulating material in electric appliances.
 - 4) Glass is transparent, allowing most of light to pass through it. If there are chromium, vanadium or iron oxides in the glass, large amount of light is absorbed in glass.

4) Differentiate between evergreen forests and grasslands. ?

Ans :

Evergreen forests	Grasslands
1. About seven percent of the Earth's surface is occupied by evergreen forests.	1. About 30 percent of the Earth's surface is covered by grasslands.
2. More than half of the earth's terrestrial plants and animals are seen in evergreen forests.	2. Grazing animals are seen in grasslands.
3. Tropical evergreen forests are dense, multi-layered.	3. Grasslands consist of tall grass. There are wild grasses and there may be some trees.
4. These forests are found in the areas receiving more than 200 cm annual rainfall i.e. very heavy rainfall.	4. There is an average of 20 - 35 inches of rainfall a year in grasslands.
5. Tropical regions show evergreen forests.	5. Several parts of the world have grasslands.

Q.3 : Solve any two of the following question.

6

1) What are the effects of increased population on ecosystem?

- Ans :**
- 1) Human population growth rate is very big as compared to other animals.
 - 2) Moreover, they are apex consumers in an ecosystem. Just like any other organisms, ecosystems provide all the basic needs to humans, too.
 - 3) However, man demands much more due to excessive population. The natural resources are utilized on the large scale only by man.
 - 4) Changing lifestyles, consumerism, degradation of nature and pollution are certain aspects which are created only by human beings.
 - 5) All these cause increased stress on the ecosystems. Large human population also produces large-scale solid wastes.

2) How the plastic is produced ?

Ans : Plastics are derived from natural, organic materials such as cellulose, coal, natural gas, salt and of crude oil. Crude oil is a complex mixture of thousands of compounds. The production of plastics begins with the distillation of crude oil in an oil refinery. This separates the heavy crude oil into groups of lighter components, called fractions. Each fraction is a mixture of hydrocarbon chains, which differ in terms of the size and structure of their molecules.

Two main processes are used to produce plastics - polymerisation and polycondensation. In a polymerisation reaction, monomers such as ethylene and propylene are linked together to form long polymer chains. In a polycondensation reaction, different monomer units are linked together to form long polymer chains. Each polymer has its own properties, structure and size depending on the nature of monomer different quality plastics are produced.

There are many different types of plastics, and they can be grouped into two main polymer families:

Thermoplastics (which soften on heating and then harden again on cooling).

Thermosets (which never soften once they have been moulded).

3) Describe the following pictures.



Ans : Both the images represent three different types of habitats. The first image represents the desert while the second image represents grassland ecosystem and an aquatic ecosystem. The first image shows a desert and the kind of plants and animals which are found in this type of habitat. There is cactus and camel in this image which are adapted to such harsh environment. The second image shows a water body which is a type of aquatic ecosystem. It also shows grassland ecosystem which consists of long grasses and variety of plants and animals.

4) Distinguish between Manmade material and natural material

Ans : **Natural materials:**

1. Natural materials are those material, which occur in nature by its own.
2. They are both renewable and non-renewable in nature.
3. They help in economic development of people.
4. They are eco-friendly.
5. They are not manufactured in factories.
6. Examples : wood, soil, etc.

Man made materials:

1. Man-made materials are a type of material that doesn't occur naturally and is made by humans.
2. They are non-renewable in nature.
3. They help in economic as well as social development
4. They are not environmental friendly.
5. They are not manufactured in factories.
6. Examples : glass, plastic, artificial thread, thermocol etc .

Q.4 : **Solve any One of the following question.** 5

1) Which measures will you arrange to minimize the environmental problems arising due to non-degradable plastic ?

Ans : **Measures arrange to minimize the environmental problems arising due to non-degradable plastic are as follows:**

1. We must reduce our plastic dependency:

We use an incredible quantity of single-use plastic items, such as straws, plastic bags, packaging, plastic cups, plates and cutlery. We must put an end to it. An increasing number of countries have now imposed a ban on disposable plastics and plastic bags, or established concrete targets for reducing plastic consumption and waste.

2. Increase fees and taxes on polluting plastics:

Most of the plastics used today are produced from oil, and are a source of both climate emissions and pollution. Governments need to investigate and implement a tax or fee on polluting plastics. The fees must be changed so that recycled plastic becomes cheaper than fossil.

3. Increased waste management where the problem is greatest:

The bulk of plastic waste comes from developing countries. Rapid population growth and a swelling middle class means the consumption of plastic is increasing faster than the capacity to handle the

plastic waste, and therefore much of the excess ends up in the sea. lished to develop waste management and recycling infrastructure.

4. Increased mapping, surveillance and research:

There is still much we do not know about the plastic problem. Researchers estimate that more than 70 percent of the plastic ends up on the sea floor. Over time, it breaks down into tiny particles, but we do not know what happens to this material or how to get rid of it. The efforts to map and monitor, as well as conduct research on the negative effects, must be strengthened.

5. Stop the flow of plastic waste into the sea:

the plastic in the ocean is suspected to come from activities and industry on land. This can include everything from car tyres, technical sports equipment and fleece clothing, to cigarette butts and cotton buds. Everyone should contribute to the solution. For example, you can participate in clean-up operations, cut your own plastic consumption and of course always pick up any garbage you find along your way.

6. Increased funds for clean-up:

To solve the plastic problem, we must ensure that action and clean-up operations are undertaken in areas where the problem is the greatest. Much of the work, however, is hampered due to the lack of financial resources. By establishing a global ocean fund, with waste management and clean-up of marine areas high on the agenda, we will be one step closer towards the goal: a future without plastic and marine pollution in our ocean.

2) Explain the interactions among the factors of an ecosystem.

Ans : Ecosystem is made up of two types of components - biotic and abiotic components. Abiotic factors include light, temperature, water, air, soil, inorganic nutrients, etc. They are the non-living components of any habitat. Biotic factors are the living components of any habitat. They include plants, animals, etc. Both the biotic and abiotic factors in an ecosystem interact with each to maintain the balance of an ecosystem. The abiotic factors play an important role in the distribution and survival of biotic factors in an ecosystem. The proportion of abiotic factors is not constant and always keeps on changing as they are used or excreted by the biotic factors. It is not only the abiotic factor which affects an ecosystem but the biotic factors also have an equal effect on abiotic components as well as other biotic components.

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