PRISM WORLD

Std.: 8 (English) General Science

Chapter: 17

Q.1 Fill in the blank and rewrite the completed statements 4

1 Plastic shows ..... property, hence it can be molded to any shape.

Ans Plastic shows **plasticity** property, hence it can be molded to any shape.

2 Motor cars are coated with .....

Ans Motor cars are coated with **teflon.**

3 ..... glass dissolves in water.

Ans **Alkali silicate** glass dissolves in water.

4 Thermocol melts at .....°C

Ans Thermocol melts at **100**°C.

Q.2 Match the pair 3

1

Column - A	Column - B
i. Lead glass	a. Electric switch
ii. Bakelite	b. Mattresses
	c. Electric bulb

Ans

i. Lead glass	Electric bulb
ii. Bakelite	Electric switch

2

A	B
i. Thermocol	a. Lens
ii. Optic glass	b. Plates
	c. Mattresses

Ans

i. Thermocol	Plates
ii. Optic glass	Lens

3

Column - A	Column - B
i. Lead glass	a. Mattresses
ii. Polypropylene	b. Plates
	c. Electric bulb

Ans

i. Lead glass	Electric bulb
ii. Polypropylene	Mattresses

Q.3 **Answer in one sentence** **2**

1 Which are the main ingredients of the glass?

Ans Glass is produced from the mixture of sand, soda, lime and small quantity of magnesium oxide.

2 Thermocol is produced from which material ?

Ans i. Thermocol is a form of a complex material called polystyrene.
ii. It transforms in to liquid state on heating at more than 100^{o}C temperature and returns to solid state on cooling. Thus it can be transformed into any shape.

Q.4 **Write Short Notes** **6**

1 Glass Production

Ans i. Glass is the non-crystalline, hard but brittle solid material formed from the mixture of silica and silicate.
ii. For glass production, mixture of sand, soda, lime and small quantity of magnesium oxide is heated in furnace.
iii. Sand i.e. silicon dioxide melts at 1700°C. So as to melt the mixture at low temperature, pieces of discarded glass are added to it. Due to this, mixture melts at 850°C.
iv. Once all the ingredients of mixture are liquefied, it is heated upto 1500°C and immediately cooled.
v. Due to the sudden cooling, mixture becomes homogeneous, amorphous and transparent instead of crystalline.

2 Optic Glass

Ans i. Optic glass is produced from the mixture of sand, soda, limestone, barium oxide and boron.
ii. This type of pure glass is useful in production of spectacle lenses, microscopic lenses.

3 State uses of plastic.

Ans Plastic are of two types, thermoplastic and thermosetting plastic. Their uses are as follows.
i. **Thermoplastic :**
a. **Polyvinyl chloride(PVC): Used in the manufacture of bottles, raincoat, toys, etc.**
b. **Polystyrene:** Used as thermo-insulating parts of electric appliances like refrigerators, gears of machine, protective coverings likes covers of CD, etc.
c. **Polyethylene:** Used in making milk bags, packing bags, flexible garden pipes, etc.
d. **Polypropylene:** Used in the manufacture of parts of loudspeakers and vehicles, ropes, mattresses, etc.
ii. **Thermosetting Plastic:**
a **Bakelite:** Used in making cabinets of radio, TV, telephones, electrical switches, etc.
b **Melamine:** Domestically useful items like cup-saucers, plate, trey etc, sound insulating coverings.
c. **Polyurethane:** Used in making surfing boards, small boats, furniture, seats in vehicles.
d. **Polyester:** Used in making fiber glass, toners of laser printers, textile industry, etc.
iii. Used in the manufacture of bottles, raincoat, toys, etc.- Not to be highlighted

Q.5 **Write properties, uses, inferences, important factors, examples** **2**

1 Write the uses of PVC.

Ans i. Polyvinyl chloride (PVC), is a synthetic resin made from the polymerization of vinyl chloride.
ii. PVC is the world's third most widely produced synthetic plastic polymer.
iii. PVC is used in an enormous range of domestic and industrial products.
iv. PVC is used to manufacture pipes, raincoat, toys, bottles, handbags, shoes, ropes, electrical cable insulation, furniture, etc.

Q.6 **Answer the following** **18**

1 How is plastic produced ?

Ans i. Plastic are derived from natural, organic materials such as cellulose, coal, natural gas, salt and crude oil.
ii. Crude oil is a complex mixture of thousands of compounds and is processed before using it for the purpose of plastic production.
iii. The production of plastic begins with the distillation of crude oil in an oil refinery that separates oil into groups of lighter components called fractions.
iv. One of these fractions, naphtha, is the crucial compound for the production of plastics.
v. Plastics are large polymers composed of repeated units of hydrocarbons, along with oxygen, nitrogen,

sulfur, etc.

2 Explain the effects of following materials on environment and human health.
Glass :

Ans Glass

i. During glass production, the mixture needs to be heated up to 1500°C.
ii. During this, green-house gases like sulphur dioxide, nitrogen dioxide, carbon dioxide are released through burning of fuel.
iii. As glass, is non-degradable, if pieces of the waste glass material flow into water body, it may affect that ecosystem.
iv. Similarly, drainage may be blocked due to these pieces.

3 Explain the effects of following materials on environment and human health.
Thermocol :

Ans Thermocol :

i. Thermocol contains carcinogenic ingredients in styrene, the person in contact with Thermocol for long duration may have the possibility of blood cancer like leukemia and lymphoma.
ii. Thermocol is non-biodegradable, hence many people opt to destroy it burning. This releases poisonous gases in atmosphere.
iii. If the food kept in Thermocol is reheated, styrene may dissolve in that food and this may lead to health problems.
iv. People staying in contact with Thermocol for long term may develop the problems of eyes, respiratory system, skin, digestive system, etc.
v. Pregnant women may face the miscarriage.
vi. Liquid styrene may cause skin-burns.

4 Write the natural or manmade raw material of the following items.

Ans
i. **Mattresses-** Polypropylene (Thermosetting plastic)
ii. **Beaker-**Silica Glass
iii. **Bangle-** Coloured Glass(Soda lime)
iv. **Chair-** Polyvinyl chloride (PVC) –Manmade or Wood (Natural)
v. **Gunny bag-**Jute
vi. **Broom-** Plants(Coconut, Corn husk)
vii. **Knife-** Metal (Irons, Steel)
viii. **Pen-** Combination of metal and Plastic (tip-Metal, Barrel of the pen is made from Polystyrene, Other parts like cap, ink-tube, etc are made from plastic)

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

Ans Environmental pollution due to plastics can be solved by following methods:

i. Avoid the use of plastics as far as possible.
ii. Always use bags, made of jute, cloth or paper.
iii. Biodegradable and non-biodegradable wastes should be separated and disposed off separately.
iv. Plastics should be recycled and reused.
v. Every citizen should follow the 4R principle i.e. Reduce (Minimal use), Reuse (Use again), Recycle(Use again after processing) and Recover(Reclaiming).

6 Explain the effects of following materials on environment and human health.
Plastic :

Ans Plastic:

i. Plastic is considered as non-degradable and hence it is an environmental pollutant.
ii. Careless disposal of plastic bags chokes drains and blocks the soil.
iii. If disposed plastic bags are eaten by cows, it can kill them.
iv. Plastic bags can also contaminate foodstuffs due to poisonous dyes getting absorbed into food. This may prove carcinogenic.
v. Burning of plastic causes environmental pollution by releasing poisonous gases.

Q.7 Extra data **2**

1 Man-made materials and Natural materials

Ans

Man-made materials	Natural materials
Materials made by man through processing in laboratories, industries are called as man-made materials. For example: Plastic, Thermocol.	Materials obtained directly from nature are called as natural materials. For example: Cotton.

2 Thermoplastic and Thermosetting plastic

Ans

Thermoplastic	Thermosetting plastic
The plastic that can be molded as per our wish is called as thermoplastic. For example: Plastic combs	The plastic that cannot be molded into another shape once a specific shape is given is called as thermosetting plastic. For example: Electrical switch