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Class - VIII

Science (Part C)

Chapter 3

Synthetic fibres and Plastics

Exercise: Explain.

① Why fibres are called synthetic

Ans - Some fibres are made by man by the synthesis of petrochemicals. So they are called synthetic.

(2) mark (✓) the correct answer.

Rayon is different from synthetic fibres because.

(a) It has a silk-like appearance.

(b) It is obtained from wood pulp. (✓)

(c) Its fibres can also be woven like those of natural fibres.

Ans. (b)

(3) Fill in the blanks with appropriate words.

(a) Synthetic fibres are also called artificial or man-made fibres.

(b) Synthetic fibres are synthesised from raw materials called polymer.

(c) Like synthetic fibres, plastic is also a petrochemical.

(4) Give ~~examp.~~ examples which indicate that nylon fibres are very strong.

Ans - Nylon is a very strong fibres that is why is used for making books, ropes, tents, tooth brushes, car seat-belts, sleeping bags, curtains, parachutes, rock climbing ropes, fishing nets etc. A nylon thread is elastic and light but actually stronger than a steel wire.

(5) Explain why plastic containers are favoured for storing food.

Ans - plastic containers are favoured for storing food for the following reasons -

- (i) plastic containers are light weight so they are easy to handle.
- (ii) the price of plastic containers is very less as compared to other containers.
- (iii) They have good strength.
- (iv) They are durable.

(6) Explain the difference between thermoplastic and thermosetting plastics.

Ans - the difference between thermoplastic and thermosetting plastic are following -

Thermoplastic	Thermosetting
(i) These plastic gets deformed easily on heating and can be bent easily. for example - polythen and P.V.C.	(i) These are the plastic which when moulded once, can not be softened by heating. for example - Bakelite and melamine.
(ii) These are used for manufacturing toys, Combs and various type of containers.	(ii) Bakelites are used for making electrical switches, handles of various utensils. melamines are used for making floor tiles, kitchen wares and fabrics which resist fire.

(7) Explain why the following are made of thermosetting plastics.

(a) Saucepan handles

(b) Electric plugs / switches / plug boards.

Ans (a) melamine is a thermosetting plastic. It is a very hard material. It resists fire and can tolerate heat better than other plastics. So, it is used for making saucepan handles, which resist fire.

(b) Bakelite is a thermosetting plastic.

It is a poor conductor of heat and electricity. So, it is used for making electric plugs, switches, and plug boards.

(8) Categorise the materials of the following products into "Can be recycled," and "Can not be recycled".

Telephone instruments, plastic toys, Cooker handles, Carry bags, ballpoint pens, plastic bowls, plastic covering on electrical wires, plastic chairs, electrical switches

Telephone instruments, plastic toys, ballpoint pens, plastic bowls, plastic covering on electrical wires can be recycled.

Cooker handles, Carry bags, plastic covering on electrical wires, plastic chairs, telephone instruments, electrical switches can not be recycled.

(9) Rana wants to buy shirts for summer. Should he buy cotton shirts or shirts made from synthetic material? Advise Rana, giving your reason.

Ans - I advise Rana to buy a cotton shirt for summer because cotton is natural fibre and it absorbs the sweat and the pores in cotton allow easy evaporation and keep our body cool whereas synthetic shirt does not absorb sweat so, they are very uncomfortable to wear in summer.

(10) Give example to show that plastics are non-corrosive in nature.

Ans - plastic are not corroded even if they come in contact with strong chemicals which is because of their non-reactive nature with most of the materials. For example, the cleaning chemicals that we use at home are stored in plastic bottles instead of ~~metals~~ metal containers.

(11) Should the handle and bristles of a tooth brush be made of the same material? explain your answer.

Ans - The bristles of a tooth brush should be made of soft material so that it does not harm the gum and handle should be made of hard material so that it can give a firm grip.

Therefore, the bristles are made up of nylon fibres which are strong, elastic,

(5)

dustproof, light weight and easy to handle
and the handle is made of hard plastic
as it is strong, durable, poor conductor
of heat and electricity.

(12) 'Avoid plastics as far as possible':
Comment on this advice.

Ans — Since plastic takes several years
to decompose, it is not environmental
friendly. It causes environmental pollution.
Beside the burning process in the synthetic
materials is quite slow and it does not
get completely burnt easily. In the process
it releases lots of poisonous fumes into the
atmosphere causing air pollution, so we
should avoid the use of plastics as far
as possible.

(13) Match the terms of Column
"A" correctly with the phrases given
in Column "B".

- | A | B |
|-----------------|---|
| (i) polystyrene | (a) Prepared by using wood pulp. |
| (ii) Teflon | (b) Used for making parachutes and stockings. |
| (iii) Rayon | (c) Used to make non-stick cookwares. |
| (iv) Nylon | (d) Fabric does not wrinkle easily. |

Ans (i) - (d) (ii) - (c) (iii) - (a)
(iv) - (b)

(6)

(14) 'manufacturing synthetic fibres is actually helping conservation of forests'
Comment.

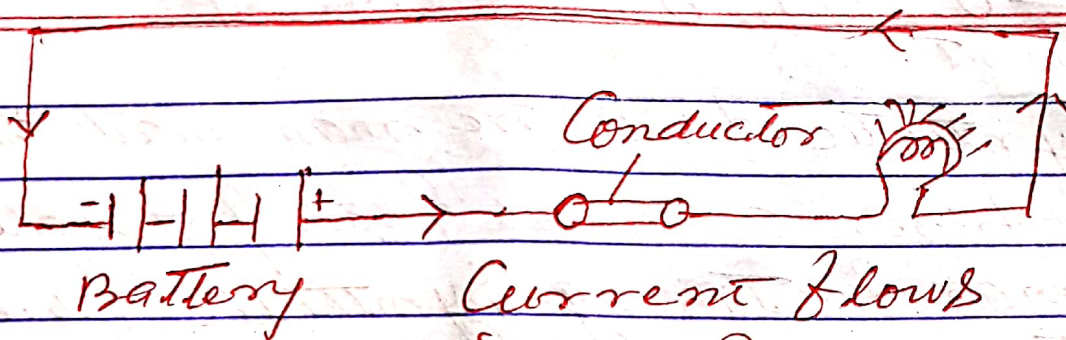
Ans - Synthetic fibres are man-made fibres. These fibres are made from petrochemicals. For manufacturing synthetic fibres cutting of trees or killing of animals is not required and we can conserve our natural environment using synthetic fibres.

Therefore, manufacturing synthetic fibres is actually helping conservation of forests.

(15) Describe an activity to show that thermoplastic is a poor conductor of electricity.

Ans - Take a small piece of thermoplastic material and connect it between the circuit as shown in the second figure. When we connect conductor in the circuit, current passes through it and the bulb glows but if we connect piece of a thermoplastic in the circuit no current passes and the bulb does not glow.

(17)



Current flows
Figure - 1

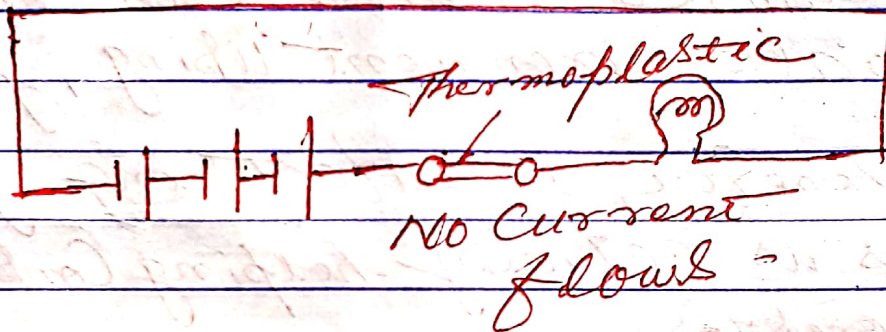


Figure - 2

4) materials: metals and non metals.

Exercise with answers

(1) Which of the following can be beaten into thin sheets?

- (a) Zinc (b) phosphorus (c) Sulphur
(d) oxygen.

Ans (a) Zinc

(2) Which of the following statement is correct?

- (a) All metals are ductile.
(b) All non-metals are ductile.
(c) Generally, metals are ductile.
(d) Some non-metals are ductile.

Ans - (c)

(3) Fill in the blanks.

(a) Phosphorus is a very reactive non metal.

(b) Metals are good conductors of heat and electricity.

(c) Iron is more reactive than copper.

(d) Metals react with acids to produce hydrogen gas.

(4) Mark 'T' if the statement is true and 'F' if it is false.

(a) Generally, non-metals react with acids.

(b) Sodium is a very reactive metal. (T) (F)

(c) Copper displaces zinc from zinc sulphate solution. (F).

(9)

(d) Coal can be drawn into wires - (F)

(5) Some properties are listed in the following 'Table'. Distinguish between metals and non-metals on the basis of the properties.

Properties	metals	Non-metals
(1) Appearance	Lustrous	Dull
(2) Hardness	Hard	Soft
(3) malleability	Malleable	Not malleable
(4) Ductility	Ductile	Not ductile
(5) Heat Conduction	Good conductor	Bad conductor
(6) Conduction of electricity	Good Conductor	Bad Conductor

(6) Give reasons for the following:

(a) Aluminium foils are used to wrap food items.

(b) Immersion rods for heating liquids are made up of metallic substances.

(c) Copper cannot displace zinc from its salt solution.

(d) Sodium and potassium are stored in kerosene.

Ans (a) Aluminium foils are used to wrap food items because it is highly malleable and it can be beaten into thin sheets. It does not react with food.

(b) Metals are good conductors of heat and electricity. So immersion rods for heating liquids are made up of metallic substances.

(c) The reactivity of Zinc is higher than Copper, so Copper cannot displace Zinc from ~~Zinc sulphate solution~~.

(d) Sodium and potassium are highly reactive metals. They can catch fire even when they come in contact with air. So, they ~~have to~~ are stored in kerosene.

(7) Can you store lemon pickle in an aluminium utensil? Explain.

Ans No, we cannot store lemon pickle in aluminium utensils because it reacts with aluminium and produce hydrogen gas and poisonous salt.

(8) Match the substances given in Column "A" with their uses given in Column "B".

A	B
(i) Gold	(a) Thermometers
(ii) Iron	(b) Electric wire
(iii) Aluminium	(c) Wrapping food
(iv) Carbon	(d) Jewellery
(v) Copper	(e) Machinery
(vi) Mercury	(f) Fuel

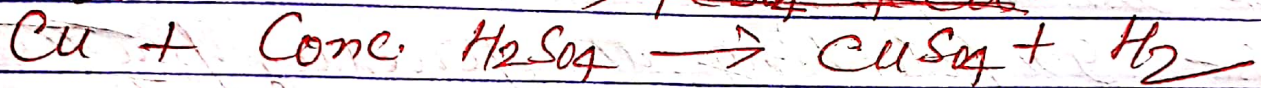
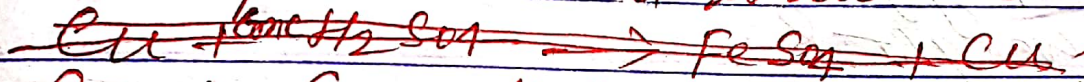
Ans (i) (d) (ii) - (e) (iii) - (c)

(iv) - (f) (v) - (b) (vi) - (a)

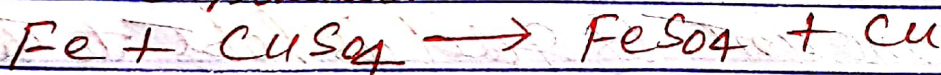
(9) What happens when
 (a) Dilute sulphuric acid is poured on a
 Copper plate?

(b) Iron nails are placed in Copper
 sulphate solution?
 Write word equation of the reactions
 involved.

Ans (a) Copper does not react with dilute sulphuric
 acid. When concentrated sulphuric acid
 is poured on a copper plate, copper reacts
 with sulphuric acid to liberate hydrogen gas.



(b) The reactivity of iron is more than copper
 so, iron displaces copper from copper
 sulphate solution.



(10) Saloni took a piece of burning charcoal
 and collected the gas evolved in a test tube.

(a) How will she find the nature of the gas?

(b) Write down word equation of all the
 reactions taking place in this process.

Ans (a) Add some water in the test tube in which
 gas is collected. Now cover the test tube
 shake it well. Test the solution with blue
 and red litmus. Blue litmus turns red
 the nature of gas is acidic. Red litmus does
 not turn.

(b) When charcoal reacts with oxygen gas
forms Carbon dioxide gas.



(11) One day Reeta went to a jeweller's shop with her mother. Her mother gave an old gold jewellery to the goldsmith to polish. Next day when they brought the jewellery back they found that there was a slight loss in its weight. Can you suggest a reason for the loss in weight?

Ans - In polishing, the jeweller put the gold jewellery in a mild acidic solution, which on reaction with acid goes into the solution. Therefore, in the process, certain amount of gold is lost to the acidic solution.

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Chapter 1 (one)

Crop production and management

फसल उत्पादन और प्रबंधन or प्रबंधन

Chapter one से सम्बन्धित कुछ परिभाषिक शब्द का हिंदी अर्थ -
Agriculture methods - कृषि पद्धतियाँ, crop - फसल, plough - हल,
Fertilizers - उर्वरक, Insecticide - कीट नाशक, Weeds - खर-पतवार,
Threshing - दमी, Winnowing - अनासना, seed = बीज,
Storage - भंडारण, silo - लोहे या लकड़ी का ड्रम या कोठी, Harvesting - कटाई,
manure - खाद, Sowing - बुआई, Irrigation - सिंचाई,
Biofertilizers - जैविक खाद, Traditional tool - परंपरागत औजार

Exercises

- Q (1) Select the correct word from the following list and fill in the blanks.
float, water, crop, nutrients, preparation
- (a) The same kind of plants grown and cultivated on a large scale (बड़े पैमाने पर) at a place is called -----
 - (b) The first step before growing crops is ----- of the soil.
 - (c) Damaged seeds would ----- on top of water.
 - (d) For growing a crop, sufficient sunlight and ----- and ----- from the soil are essential.

Ans: (a) crop (b) preparation (c) float (d) water, nutrients = (पोषक)

Q (2) Match items in column 'A' with those in column 'B'.

A	B
(i) Kharif crops	(e) Food for cattle
(ii) Rabi crops	(b) Urea and super phosphate
(iii) chemical fertilizers	(c) Animal excreta, Cow dung, urine and plant waste
(iv) organic manure	(d) wheat, gram, pea
	(e) paddy and maize

Ans - (i) - (e) (ii) - (d) (iii) - (b) (iv) - (c)

Q-(3) - Give two examples of each:

(a) Kharif crop

Ans - (a) paddy, maize

(b) Rabi crop

Ans - (b) wheat, gram

Q-(4) Explain how fertilizers are different from manure.

Ans - Fertilizers are chemical substances which are rich in particular nutrients. They are produced artificially in factories whereas manures are obtained from plants or animal wastes. So they are called organic manures. They are produced in the agricultural field as compost.

Q-(5) What is irrigation? Describe two methods of irrigation which conserve water.

Ans - Irrigation (पानी देना) - The supply of water to crops at regular intervals is called irrigation.

Two methods of irrigation which conserve water are (i)

(i) Sprinkler system (पानी छिड़कना) (ii) Drip system (पानी की बूँद)

(i) sprinkler system - This system is more useful on the uneven land where sufficient water is not available. In this system the perpendicular pipes having rotating nozzles on top are joined to the main pipeline with the help of a pump. It escapes from the rotating nozzles. It is sprinkled on the crop as if it is raining.

(ii) Drip system - In this system, the water falls drop by drop directly near the roots. So it is called drip system. It is the best technique for watering fruits plants, gardens and trees. Water is not wasted at all. It is a boon in regions where availability of water is poor.

Q: 6 If wheat is sown in the Kharif season, what would happen? Discuss.

Ans — Kharif crops are sown in the rainy season because ~~it needs~~ a lot of rainfall. Whereas wheat needs winter season and it needs not a lot of rainfall. If wheat is sown in Kharif season, the will damage due to heavy rainfall.

Q: 7 What are weeds? How can we control them?

Ans — In a field many other undesirable plants may grow naturally along with the crop. These undesirable plants are called weeds. It is necessary to remove weeds because crop plants may not get sufficient water, nutrients and manures of the soil. So they are removed either by manual method or by using weedicides.

In manual method weeds are removed by uprooting or cutting them. This is done with the help of a khurpi or a harrow. We can remove weeds by using weedicides.

End

Microorganisms: Friend and Foe

सूक्ष्मजीव : कुछ मित्र और कुछ शत्रु

Microorganisms — There are other living organisms around us which we normally cannot see. These are called microbes or microorganisms. They are classified into four major groups. These groups are bacteria, fungi, protozoa and some algae.

NOTE — viruses are microorganisms but are different from other microorganisms. Some microorganisms are useful and some are harmful.

Exercises

Q. ① Fill in the blanks.

(a) Microorganisms can be seen with the help of a _____.

(b) Blue green algae fix _____ directly from air and enhance fertility of soil.

(c) Alcohol is produced with the help of _____.

(d) Cholera is caused by _____.

Ans — (a) Microscope (b) Nitrogen (c) Yeast (d) Bacteria

Q. 2 Tick the correct answer:

(a) yeast is used in the production of
(i) sugar (ii) alcohol (iii) oxygen (iv) HCl

(5) The following is an antibiotic

- (i) Sodium bicarbonate (ii) streptomycin (iii) Alcohol (iv) yeast.

(6) Carrier of malaria-causing protozoan is

- (i) Female Anopheles mosquito (ii) cockroach (iii) house fly (iv) butterfly.

(7) The most common carrier of communicable diseases

- (i) ant (ii) housefly (iii) dragonfly (iv) spider

(8) The bread or idli dough rises because of

- (i) heat (ii) grinding (iii) growth of yeast cell (iv) Kneading.

(9) The process of conversion of sugar into alcohol is called

- (i) Nitrogen fixation (ii) moulding (iii) fermentation (iv) infection

Ans - (a) (ii) alcohol (b) (iii) streptomycin (c) (i) Female anopheles mosquito (d) (ii) housefly (e) (iii) growth of yeast cell (f) (iii) Fermentation

Q. (3) match the organisms in column A with their action in B

A

B

(i) Bacteria

(a) Fixing nitroge

(ii) Rhizobium

(b) setting of curd

(iii) Lactobacillus

(c) baking of bread

(iv) yeast

(d) causes malaria

(v) A protozoan

(e) cholera

(vi) A virus

(f) causing AIDS

(g) producing antibodies

Ans - (i) (e) cholera (ii) - (a) Fixing nitrogen (iii) - (b) setting of curd (iv) - (c) Baking of bread (v) - (d) causes malaria (vi) (f) causing AIDS.

Q.4 - Can microorganisms be seen with the naked eyes? If not, how can they be seen?

Ans - No, we cannot see them with the naked eyes. They can be seen with the help of a microscope.

Q.5) What are the major groups of micro-organisms?

Ans - The major groups of micro-organisms are bacteria, fungi, protozoa and some algae.

Q.6 - Name the micro-organisms which can fix atmospheric nitrogen in the soil.

Ans - They are rhizobium, azotobacter, blue-green algae etc.

Q.7) What are antibiotics? What precautions must be taken while taking antibiotics?

Ans - The medicines that kill or stop the growth of the disease causing micro-organisms are called antibiotics. streptomycin, tetracycline, erythromycin etc are some of the commonly known antibiotics. They are made from fungi and bacteria.

The precautions to be taken in using antibiotics are as follows:

① These medicines should be taken only on the advice of a qualified doctor.

P.T.O.

(ii) one must finish the course prescribed by a doctor

(iii) If any body takes antibiotics when not needed, her/his body may develop resistance against that antibiotics.

The end