

## CHAPTER 3-SYNTHETIC FIBRES AND PLASTICS

**Question 1. Explain why some fibres are called synthetic.**

**Answer-** Because synthetic or man-made fibres are obtained from petrochemicals by human.

**Question 2. Mark (✓) the correct answers.**

**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.

**Question 3. Fill in the blanks with appropriate words.**

- (a) Synthetic fibres are also called **artificial** or **man-made** fibres.
- (b) Synthetic fibres are synthesized from raw material called **petrochemicals**.
- (c) Like synthetic fibres, plastic is also a **polymer**.

**Question 4. Give examples which indicate that nylon fibres are very strong.**

**Answer-** They are used to make parachutes and ropes for rock climbing.

**Question 5. Explain why plastic containers are favored for storing food.**

**Answer-** The main advantage of using plastic for storing food are-

- a. Plastic has light weight.
- b. Good strength.
- c. Easy to handle.
- d. Plastic is non reactive .

**Question 6- Explain the difference between thermoplastic and thermosetting plastics.**

**Answer-**

Thermoplastic	Thermosetting plastics
1. Thermoplastic can be bent easily.	1. Thermosetting plastic cannot be bent easily
2. Thermoplastic can be softened easily by heating.	2. Thermosetting plastic cannot be softened by heating.
3. It can be reshaped.	3. It cannot be reshaped once moulded.

**Question 7. Explain why the following are made of thermosetting plastics.**

- (a) Saucepan handles
- (b) Electric plug/ switches /plug boards

**Answer- (a) Saucepan handles:** Saucepan handles are made from the thermosetting plastics because these are bad conductors of heat and electricity. They do not bend or deform on heating.

**(b) Electric plug/ switches /plug boards :** Thermosetting plastics such as bakelite are poor conductors of heat and electricity. Therefore, they are used for making electric plugs, switches, plug boards, etc.

**Question 8. Categorise the materials of the following products into ‘can be recycled’ and ‘cannot be recycled’.**

**telephone instruments, plastic toys, cooker handles, carry bags, ball point pens, plastic bowls, plastic covering on electrical wires, plastic chairs, electrical switches.**

**Answer-**

Can be Recycled	Cannot be Recycled
Plastic toys	Telephone instruments
Carry bags	Cooker handles
Ball point pens	Electrical switches
Plastic bowls	
Plastic covering on electrical wires	
Plastic chairs	

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

**Answer-** Rana should buy shirts made from cotton. This is because cotton is a good absorber of water. It absorbs the sweat coming out of our body and exposes it to the environment thereby cooling our body.

**Question 10- Give examples to show that plastics are noncorrosive in nature.**

**Answer-** 1. Plastics don't react with acids or bases which are kept in them. The cleansing chemicals that we use at home are stored in plastic bottles, instead of metal containers.

2. Plastics don't react with air and water. For example: chairs, buckets all are made from plastics.

**Question 11: Should the handle and bristles of a tooth brush be made of the same material? Explain your answer.**

**Answer-** No, the handle and bristles of a toothbrush cannot be made of the same material. This is because the handle has to be hard and strong while bristles have to be soft and flexible.

**Question 12. ‘Avoid plastics as far as possible’. Comment on this advice.**

**Answer-** This is because plastics are non-biodegradable. The waste created by plastics is not environment-friendly, which on burning release poisonous gases. Plastics may take years to degrade and keep on piling up

and hence are an environmental hazard for the living community.

**Question 13. Match the terms of column A correctly with the phrases given in column B.**

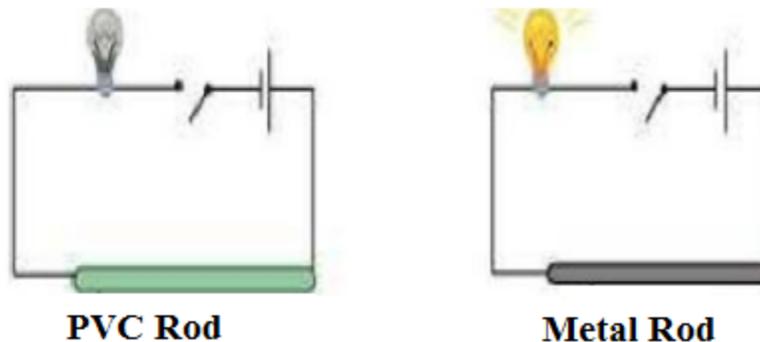
A	B
(i) Polyester	(a) Prepared by using wood pulp
(ii) Teflon	(b) Used for making parachutes and stockings
(iii) Rayon	(c) Used to make non-stick cookware
(iv) Nylon	(d) Fabrics do not wrinkle easily

**Question 14. ‘Manufacturing synthetic fibres is actually helping conservation of forests’. Comment.**

**Answer-** Raw materials for natural fibres are mainly derived from plants and this means cutting a lot of trees. This leads to deforestation. But raw materials of synthetic materials are mainly petrochemicals. Hence, manufacturing synthetic fibres helps in the conservation of forests.

**Question 15. Describe an activity to show that thermoplastic is a poor conductor of electricity.**

**Answer-** Make an electric circuit as given in figure. First, we connect the two ends of the copper wires with the metal rod. Next, we replace it with the PVC rod. The LED bulb glows when the metal rod is connected but does not glow when the PVC rod is connected. Hence we can say that thermoplastic is a poor conductor of electricity.



## ONE MARK MCQs

**1. Navkiran learned about natural fiber in school today. How will she find out the given fiber is natural or not?**

- |                             |                            |
|-----------------------------|----------------------------|
| a) By smelling the fiber    | b) By looking at the fiber |
| c) By burning the fiber (✓) | d) None of these           |

**2. Gurinder noticed today that electrical switches are made up of special material. Which material is used to make electrical switches?**

- |         |           |         |                              |
|---------|-----------|---------|------------------------------|
| a) Wood | b) Rubber | c) Iron | d) Thermosetting plastic (✓) |
|---------|-----------|---------|------------------------------|

**3. Harpreet has two shirts, one of which is made of cotton and other of silk. Out of both the shirts,**

which will absorb more water?

- a) Silky                      b) Cotton (✓)                      c) Both equally                      d) Cannot say anything

**4. During her class today, Mandeep learned that there is a material which turns its shape on heating.**

**Can you tell the name of that material?**

- a) Plastic                      b) Thermo plastic (✓)                      c) Acrylic                      d) All of these

**5. Ravi's mother always bought PET bottles to store water. Where else PET is used?**

- a) Utensil                      b) Wires                      c) Film                      d) All of these (✓)

**6. Varinder saw a board of "plastic free city" while he visited Chandigarh. Plastic is hazardous to our environment because**

- a) Plastic is biodegradable                      b) Plastic is not strong  
c) Plastic is non-biodegradable (✓)                      d) All of above

**7. Sukhjinder came to know today that we get silk from silk worm. On which tree does silk worm lives on?**

- a) Mulberry tree (✓)                      b) Babool tree                      c) Cotton plant                      d)Neem tree

**8. Amandeep's mother uses plastic container to store pickle. She does this because**

- a) Plastic container is cheap                      b) Plastic doesn't react with air  
b) Pickle doesn't turn poisonous                      d) All of above(✓)

**9. Ramandeep told her friend that she bought a sweater made up of acrylic wool. Is sweater made up of acrylic wool cheaper or costlier than natural wool?**

- a) Costlier                      b) Cheaper(✓)                      c) Equal price                      d) Can't say anything

**10. Alka was drying some clothes after washing. After some time she noticed that few clothes had fully dried, while other clothes were still wet. Why were some clothes still wet?**

- a) they were made of synthetic fibers                      b) they were made of cotton (✓)  
c) they were made of silk                      d) none of these

**11. The teacher taught the students about the different types of natural and synthetic fibers and asked them which is the strongest fibre?**

- a) Nylon(✓)                      b) Rayon                      c) Polyester                      d) Cotton

**12. While distinguishing between synthetic and natural fibers, Balkaran burnt a piece of fiber given by the teacher and noticed that the sample burnt slowly and shrank into a solid mass. Which fiber is this?**

- a) Cotton                      b) nylon(✓)                      c) wool                      d) none

**13. Teacher taught about nylon fiber in class. Nylon is used to make.**

- a) Socks                      b) ropes                      c) Tents                      d) all of above (✓)

**14. Terylene is an example of:-**

- a) Nylon                      b) Rayon                      c) Polyester(✓)                      d) None of these

**15. The teacher explained that when small subunits (monomers) form bonds among each other and form a larger unit which is called as \_\_\_\_\_.**

- a) Cellulose                      b) polymer(✓)                      c) nylon                      d) none of these

**16. Name that fiber which has same characteristics as that of silk.**

- a) Nylon                      b) Rayon (✓)                      c) Polyester                      d) None of these

**17. Navkiran observed that melamine is ..... plastic**

- a) Thermosetting                      b) Thermoplastic (✓)                      c) Polyester                      d) None of these

**18. Sarabjit wants to buy some shirts to wear during the summer season. Which fabric shirts would you suggest him to buy?**

- a) made from synthetic fibers                      b) Silk                      c) cotton (✓)                      d) All of these

**19. Meera's mother told her that it is not advisable to wear clothes made of synthetic fibers while cooking food in kitchen because –**

- a) they are costly                      b) they are difficult to wash  
c) it's dangerous to wear them near fire (✓)                      d) none of these

**20. The teacher told the students that in order to keep our environment neat and clean we must follow \_\_\_\_\_ principle**

- a) Swachh Bharat                      b) 3 R (✓)                      c) 2 R                      d) none

**21. Which synthetic fiber is also known as artificial fiber?**

- a) Nylon                      b) terylene                      c) rayon                      d) all the above (✓)

**22. Mandeep came to know that cotton is also a polymer known as cellulose. Name the monomers (subunits) of cellulose.**

- a) Glucose (✓)                      b) maltose                      c) rayon                      d) protein

**23. Prabhsimran learnt from his teacher that nylon is an artificial (man-made) fiber which is prepared without using any natural raw material. Of which raw material is nylon prepared ?**

- a) air, coal and water                      b) coal and petroleum (✓)                      c) cotton and silk                      d) none of these

**24. All the synthetic (artificial fibers) are prepared by different methods from a special type of raw material known as \_\_\_\_\_.**

- a) petrochemicals (✓)                      b) cellulose                      c) bakelite                      d) all of these

**25. Avneet came to know after reading the lesson that plastic is also a polymer in which the**

monomer units are linked linearly in some while they are \_\_\_\_\_ in the others.

- a) Linear                      b) crosslinked (✓)                      c) spiral                      d) none of these

**26. While cooking in a microwave, containers made of special plastics are used? Why is it done so?**

- a) they are cheap                      b) special plastic remains unaffected of heat in the microwave (✓)  
c) any utensil can be used                      d) all of these

**27. Why should the use of plastics be reduced?**

- a) its costly      b) its non-biodegradable      c) its harmful to environment      d) both 'b' and 'c' (✓)

**28. Nowadays we use carry bags made from cloth or paper in order to bring commodities to home from market. Why according to you is the use of plastic banned?**

- a) they are cheap                      b) they are biodegradable  
c) they are strong as compared to natural fibers      d) they are non-biodegradable (✓)

**29. Teacher told Dharminder that there is a synthetic fiber which is synthesized from renewable source. Name the fibre?**

- a) Nylon                      b) polyester                      c) rayon (✓)                      d) acrylic

**30. Naresh is planning to climb a mountain. Out of the following, which rope must he used?**

- a) Silk rope                      b) Cotton                      c) Nylon Rope (✓)                      d) None of these

## CHAPTER 5- COAL AND PETROLEUM

**Question 1. What are the advantages of using CNG and LPG as fuels?**

**Answer-** The advantages of using compressed natural gas (CNG) and liquefied petroleum gas (LPG) as fuels are:

- (i) They can be burnt directly.
- (ii) They can be transported easily through pipe lines.
- (iii) They are clean fuels and do not give smoke when burnt.
- (iv) They give a lot of heat energy when burnt.

**Question 2. Name the petroleum product used for surfacing of roads.**

**Answer-** Bitumen.

**Question 3. Describe how coal is formed from dead vegetation. What is this process called?**

**Answer-** Dense forests got buried under the soil due to natural processes, millions of years ago. More and more soil got deposited over them and they got compressed more. This led them to get exposed to very high temperature and pressure. They slowly got converted into coal under these extreme conditions. The whole process of formation of coal from dead vegetation is known as carbonization.

**Question 4. Fill in the blanks.**

- (a) Fossil fuels Coal, Petroleum , and natural gas.
- (b) Process of separation of different constituents from petroleum is called refining.
- (c) Least polluting fuel for vehicle is Compressed Natural Gas (CNG).

**Question 5. Tick True/False against the following statements.**

- (a) Fossil fuels can be made in the laboratory. **(FALSE)**
- (b) CNG is more polluting fuel than petrol. **(FALSE)**
- (c) Coke is almost pure form of carbon. **(TRUE)**
- (d) Coal tar is a mixture of various substances. **(TRUE)**
- (e) Kerosene is not a fossil fuel. **(FALSE)**

**Question 6- Explain why fossil fuels are exhaustible natural resources.**

**Answer-** Because sources of fossil fuels are limited on earth, and fossil fuels take million years to replenish.

**Question 7. Describe characteristics and uses of coke.**

**Answer- Characteristics:** i) Coke is tough, porous and black in colour.

**Uses:** i) In the manufacture of steel, ii) In the extraction of metals (as a reducing agent).

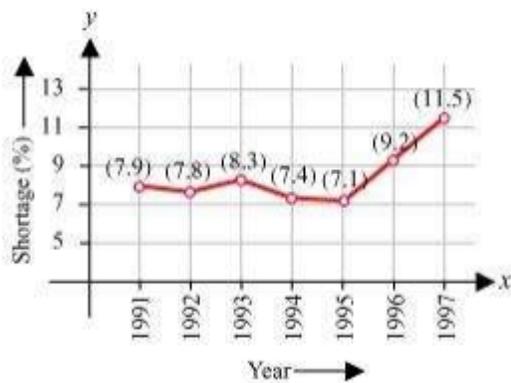
**Question 8. Explain the process of formation of petroleum.**

**Answer-** Dead organisms that got buried in the sea millions of years ago got covered with layers of sand and clay. Due to lack of air, high temperature, and high pressure, these dead organisms got transformed into petroleum and natural gas.

**Question 9. The following Table shows the total power shortage in India from 1991–1997. Show the data in the form of a graph. Plot shortage percentage for the years on the Y-axis and the year on the X-axis.**

S. No.	Year	Shortage (%)
1	1991	7.9
2	1992	7.8
3	1993	8.3
4	1994	7.4
5	1995	7.1
6	1996	9.2
7	1997	11.5

**Answer-**



**Question 10. Write various constituents of petroleum and their uses.**

**Table 5.1 Various constituents of petroleum and their uses**

S.No.	Constituents of petroleum	Uses
1.	Petroleum Gas in Liquid form (LPG)	Fuel for home and industry
2.	Petrol	Motor fuel, aviation fuel, solvent for dry cleaning
3.	Kerosene	Fuel for stoves, lamps and for jet aircrafts
4.	Diesel	Fuel for heavy motor vehicles, electric generators
5.	Lubricating oil	Lubrication
6.	Paraffin wax	Ointments, candles, vaseline etc.
7.	Bitumen	Paints, road surfacing

## ONE MARK MCQs

### 1. PCRA stands for:

- a) Public Conservations Research Association      b) Petroleum Conservation Research Association (✓)  
 c) Public Council of Research Association      d) None of these

### 2. LPG is a colourless and odourless gas, But on leakage from cylinder we notice a pungent smell.

Which chemical is responsible for this pungent smell?

- a) Ethyl Alcohol      b) Sodium Hydroxide      c) Ethyl Mercaptan (✓)      d) Carbon Monoxide

### 3. As we know petroleum is mixture of many constituents. By which process is petroleum refined?

- a) Fractional distillation (✓)      b) Destructive distillation  
 c) Distillation      b) All of the above

### 4. As we know LPG is a gas, but it is filled in the cylinder in the form of liquid. How is LPG gas converted to liquid form?

- a) By increasing volume      b) By applying high pressure (✓)  
 c) By increasing temperature      d) By reducing pressure

### 5. When all coal and petroleum will get exhausted then which will be our Future fuel ?

- a) wood      b) Hay and straw      c) Mustard oil      d) Hydrogen Gas (✓)

### 6. How is coke superior to coal as a fuel?

- a) Coal is a mineral and burns releasing smoke, while coke burns without residue.

- b) Coal is an impure form of carbon, while coke is a pure form of carbon.
- c) Calorific value of coal is low whereas the calorific value of coke is high.
- d) All of the above(✓)

**7. Which of the following is in descending order of the quality of coal?**

- a) Peat > bituminous > lignite > anthracite
- b) Bituminous > peat > lignite > anthracite
- c) Anthracite > bituminous > lignite > peat (✓)
- d) Lignite > anthracite > bituminous > peat

**8. Millions of years ago due to natural disasters forests got buried under the soil. They got compressed due to deposition of more layers of soil and this caused rise in temperature. With the effect of temperature and compression, forests were converted into coal. The slow conversion of dead vegetation into coal is known as ...**

- a) Photosynthesis
- b) Oxidation
- c) Carbonization (✓)
- d) Reduction

**9. In fractional distillation of petroleum, where do the vapours with highest boiling point condense?**

- a) In the upper-most portion (✓)
- b) In the lower-most portion
- c) In the middle portion
- d) Cannot be said

**10. Which of following is the main constituent of natural gas?**

- a) C<sub>2</sub>H<sub>6</sub> ( Ethane )
- b) CH<sub>4</sub> ( Methane ) (✓)
- c) C<sub>3</sub>H<sub>8</sub> ( Propane )
- d) C<sub>4</sub>H<sub>10</sub> ( Butane )

**11. During fractional distillation of petroleum, the crude petroleum is heated to:**

- a) 600 °C
- b) 400–500 °C (✓)
- c) 200 °C
- d) 100 °C.

**12. Assertion (A): Petroleum is called Black Gold Reason (R): Due to its great commercial importance, petroleum is called Black Gold.**

- a) A is correct and R is the correct explanation of A. (✓)
- b) A is correct and R is not the correct explanation of A
- c) A is correct and R is wrong.
- d) A is wrong and R is correct.

**13. What should be the characteristic of a rocket fuel?**

- a) Light and compact
- b) High calorific value
- c) Should burn rapidly
- d) All of the above (✓)

**14. Which of the following is obtained from coal tar?**

- a) Petrol
- b) Coke
- c) Natural Gas
- d) Naphthalene balls (✓)

**15. Assertion (A): Coal, petroleum and natural gas can be prepared in the laboratory from dead organisms. Reason (R): They cannot be prepared in laboratory as their formation is a very slow process and conditions for their formation cannot be created in the laboratory.**

- a) A is correct and R is the correct explanation of A.
- b) A is correct and R is not the correct explanation of A
- c) A is correct and R is wrong.
- d) A is wrong and R is correct. (✓)

**16. A black coloured thick liquid is used in the furnaces as a fuel. Name the liquid.**

- a) Diesel (✓)
- b) Kerosene oil
- c) Bitumen
- d) Fuel oil

**17. Neha was travelling with her mother in a bus. She observed a black liquid had been spread over road to construct new roads. She asked about this liquid from her science teacher in the class. Her teacher replied that black liquid is a product of Petroleum which is also used to make roofs of houses. This black liquid is .....**

- a) Diesel
- b) kerosene
- c) Bitumen (✓)
- d) Paraffin Wax

**18. Manpreet went to Delhi in holidays to her grandmother's home. She asked green auto rickshaw to go home. She also saw many black auto rickshaws which were producing large quantity of smoke. She asked to auto rickshaw driver about this. Driver of auto rickshaw replied that there are green buses too. These green color vehicles run on a gas which produces less smoke and is cheaper too. This is a step taken by government to reduce air pollution. Gas used in auto rickshaw will be -----.**

- a) Hydrogen
- b) CNG (✓)
- c) LPG
- d) Nitrogen

**19. Shingara read in Newspaper that some people were sleeping in closed room with burning charcoal fire. In the morning all were dead. Shingara got astonished and asked from his science teacher that how can charcoal fire cause death. Teacher explained that when charcoal is burned in limited supply of air a colorless and odorless gas is produced, which causes death. Name of gas is ....**

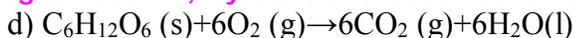
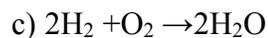
- a) Carbon monoxide (✓)
- b) Carbon dioxide
- c) Hydrogen gas
- d) Nitrogen gas

**20. Delhi is one of the most polluted cities of the world. Due to petrol and diesel vehicles, air of Delhi is polluted to dangerous level. So government has suggested to use..... as alternate of petrol and diesel to control pollution.**

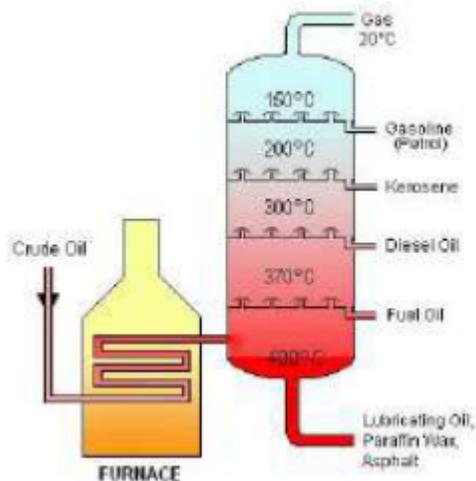
- a) L.P.G
- b) C.N.G (✓)
- c) Coke
- d) None of these

**21. The Taj Mahal is an historical monuments of our country, which is made of white marble. Air pollution in that area cause acid rain due to which white marble of Tajmahal turns yellowish. Which of the following chemical reaction represents Acid Rain.**

- a)  $O + O_2 \rightarrow O_3$
- b)  $SO_2 + H_2O \rightarrow H_2SO_3$  (✓)



22. What does following figure represents:



a) Furnace of a factory

b) Burning of coal

c) Fractional distillation of Petroleum (✓)

d) Electric generator

23. When coal is heated in the absence of air, then a black coloured porous solid residue is left behind which is used for metal extraction. What is the name of that Residue ?

a) Coaltar

b) coke(✓)

c) black oil

d) grease

24. Match the column

1. Lignite

p. Produce more smoke and gives ash on burning

2. Bituminous

q. Brown and soft

3. Anthracite

r. Black and Soft

4. Peat

s. Black, Shiny And Hard

a) 1-q, 2-r, 3-s, 4-p (✓)

b) 1-p, 2-q, 3-r, 4-s

c) 1-s, 2-r, 3-q, 4-p

d) 1-r, 2-s, 3-p, 4-q

25. Assertion (A): The slow process of conversion of dead vegetation into coal is called distillation.

Reason (R): When heated in air, coal burns and produces mainly carbon dioxide gas.

a) A is correct and R is the correct explanation of A.

b) A is correct and R is not the correct explanation.

c) A is correct and R is wrong.

d) A is wrong and R is correct. (✓)

## CHAPTER- 14 CHEMICAL EFFECTS OF ELECTRIC CURRENT

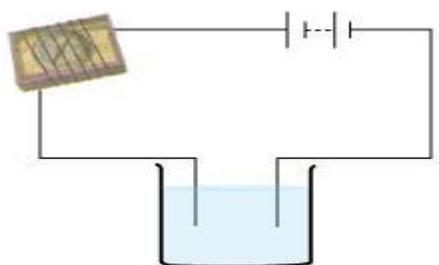
**Question 1. Fill the blanks.**

- (a) Most liquids that conduct electricity are solutions of acids, bases and salts.
- (b) The passage of an electric current through a solution causes chemical effects.
- (c) If you pass current through copper sulphate solution, copper gets deposited on the plate connected to the negative terminal of the battery.
- (d) The process of depositing a layer of any desired metal on another material by means of electricity is called electroplating.

**Question 2. When the free ends of a tester are dipped into a solution, the magnetic needle shows deflection. Can you explain the reason?**

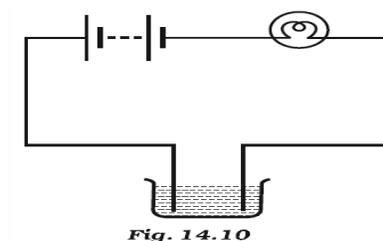
**Answer-** Yes, because solution is conductor of electricity.

**Question 3 Name three liquids, which when tested in the manner shown in Fig.14.9 may cause the magnetic needle to deflect.**



**Answer-** Vinegar, Lemon juice and tap water.

**Question 4. The bulb does not glow in the setup shown in fig. 14.10. List the possible reasons. Explain your answer.**



**Fig. 14.10**

**Answer-** The bulb may not glow because of the following reasons:

- (i) Liquid in the beaker may be non-conducting.
- (ii) The battery may be exhausted and does not have sufficient energy to generate electricity.
- (iii) The bulb may be fuse.
- (iv) Connections may be loose.

**Question 5.** A tester is used to check the conduction of electricity through two liquids. Labelled A and B. it is found that the bulb of the tester glows brightly for liquid A while it glows very dimly for liquid B. you would conclude that

- (i) Liquid A is a better conductor than liquid B (✓)
- (ii) Liquid B is a better conductor than liquid A
- (iii) Both liquids are equally conducting
- (iv) Conducting properties of liquid cannot be compared in this manner.

**Question 6- Does pure water conduct electricity? If not, what can we do to make it conducting?**

**Answer-** No. Pure water does not conduct electricity. This is because pure water do not have any free ion. Pure water can conduct electricity when a pinch of common salt is added to it, as salt solution is conducting in nature.

**Question 7. In case of fire, before the firemen use the water hoses, they shut off the main electric supply for the area. Explain why they do this.**

**Answer-** Water usually contains salts and conducts electricity. If the electrical supply is not cut off and firemen come in contact with wet electric switches, electric wires and other electrical appliances, he can get electric shock.

**Question 8. A child staying in a coastal region tests the drinking water and also the seawater with his tester. He finds that the compass needle deflects more in the case of seawater. Can you explain the reason?**

**Answer-** Water we use for drinking purposes has very less amount of salts dissolved in it while sea water has very high concentration of salts in it. So, compass needle shows more deflection in case of sea water.

**Question 9. Is it safe for the electrician to carry out electrical repairs outdoors during heavy rain pour? Explain.**

**Answer-** No. It is not safe to repair electrical appliances outdoors during heavy downpour. This is because rain water contains small amounts of acids in it which makes it a conductor of electricity. So, the electrician may get electrical shocks while working outdoors during rain.

**Question 10- Paheli had heard that rainwater is as good as distilled water. So, she collected some rainwater in a clean glass tumbler and tested it using a tester. To her surprise she found that the compass needle showed deflection. What could be the reason?**

**Answer-** Rain water is said to be pure water. But many impurities and acidic gases get dissolved in the rain water while it falls to the earth through the atmosphere. Due to the presence of these impurities and small amounts of acids in it, the rainwater conducts electricity.

**Question 11. Prepare a list of objects around you that are electroplated.**

**Answer-** The objects which are electroplated are:

- (i) Taps of water connection.
- (ii) Parts of bicycle.
- (iii) Body of cars, motor cycle and tractors.
- (iv) Handles of the doors.

**Question 12- The process that you saw in Activity 14.7 is used for purification of copper. A thin plate of pure copper and a thick rod of impure copper are used as electrodes. Copper from impure rod is sought to be transferred to the thin copper plate. Which electrode should be attached to the positive terminal of the battery and why?**

**Answer-** The thick rod of impure copper should be attached to the positive terminal of battery. This is because the copper ions of the solution will get deposited on the thin rod and the loss of copper from the solution will be restored from the thick rod to the positive terminal of the battery. Thus, copper from the thick rod could be extracted out..

### ONE MARK MCQs

**1. Veena has read that some substances are good conductors of electricity where as some are bad conductors. Among the following which substance is good conductor of electricity?**

- a) Copper                      b) Silver                      c) Iron                      d) All of the above (✓)

**2. Today Rohit came to know that in the ancient times people used a device to detect direction. What was that device called?**

- a) Voltmeter                      b) Ammeter                      c) Magnetic Compass (✓)                      d) All of the above

**3. Manish today read about various effects of electric current. Electric bulb works on which effect of electric current?**

- a) Heating effect (✓)                      b) Magnetic effect                      c) Chemical effect                      d) All of the above

**4. Neeta's mother today brought gold plated silver jewelry. What is the process of plating one metal on another metal called?**

- a) Vaporization                      b) Electroplating (✓)                      c) Distillation                      c) All of the above

**5. Dhruv was very happy to see traffic signals in the city. What kinds of lights are used in traffic signals?**

- a) Tungsten bulb                      b) LED bulb (✓)                      c) Neon bulb                      d) None of the above

**6. Meenakshi broke a dry cell today. She got a black colored rod from it. What is this rod called?**

- a) Electrode (✓)                      b) Electrolyte                      c) Insulator                      d) All of the above

**7. Heera singh is surprised that the flow of electric current breaks the water into hydrogen and oxygen. Can you tell me that due to which effect of current this happens?**

- a) Heating effect                      b) Chemical effect (✓)                      c) Magnetic effect                      d) All of the above

**8. Today Baljinder saw in science lab that lemon juice is good conductor of electricity. Among the following which is good conductor of electricity?**

- a) Vinegar                      b) Tap water                      c) Tomato juice                      d) All of the above (✓)

**9. Electricity repair is going on at sewak's house. He saw that handles of electrical repairing tools are made up of plastic. What is the reason for this?**

- a) Plastic is good conductor of electricity.                      b) Plastic is bad conductor of electricity. (✓)  
c) Plastic generates electricity.                      d) None of the above.

**10. Pankaj knows that pure water is bad conductor of electricity. If you dissolve salt in water what will happen?**

- a) Water will become good conductor of electricity (✓)                      b) Water will become bad conductor of electricity.  
c) Water will neither become good conductor nor bad conductor.                      d) None of the above.

**11. Sanjeev noted that there is layer of another metal on iron vehicles. Why is this done?**

- a) To prevent rusting.                      b) To increase the strength of iron.  
c) To make the surface shiny.                      d) All of the above. (✓)

**12. Rupinder and Noor attached one end of a LED bulb with a cell and other with a screwdriver. If screwdriver is made of iron then what will happen if it is attached to the other terminal of cell?**

- a) Bulb will glow(✓)                      b) Bulb will not glow                      c) Can't say anything                      d) Bulb will blink.

**13. Robin stood near motorcycle and asked his father that the rim of wheel is made of iron but why is it more shiny then normal iron?**

- a) Due to more driving                      b) Motorcycle is new  
c) There is plating of another metal on iron (✓)                      d) Can't say anything.

**14. On passing electricity through copper sulphate solution, copper will deposits on the plate connected to which terminal of battery?**

- a) Positive terminal                      b) Negative terminal (✓)                      c) Both terminals                      d) None of the both.

**15. While electroplating of copper which liquid is added to make the copper sulphate solution more conducting?**

- a) Sulphuric acid (✓)                      b) Sodium Hydroxide                      c) Sugar solution                      d) Kerosene oil

**16. Out of below given options which is the use of magnetic effect of current?**

- a) Electroplating                      b) Electric Iron                      c) Electric Bulb                      d) Electric Bell (✓)

17. Rajesh's father brought a LED from market. Rajesh noted that one wire of LED is long and another is short. The Long wire is connected to which terminal of battery?

- a) Positive terminal (✓)    b) Negative terminal    c) Neither positive nor negative    d) Any terminal

18. Pari's father told her that air is bad conductor of electricity. But Pari has seen the lighting moving toward ground very fast in rainy season even though it was not raining at that time. What is then reason for this?

- a) Due to low temperature                      b) Due to more humidity in air (✓)  
c) Due to high wind speed                      d) All of the above

19. Some articles e.g. some parts of cars, taps and gas burners have plating of chromium on them. Among the given statements which is not correct for chromium?

1. Chromium has shine. 2. Chromium does not corrode. 3. Chromium is very cheap.

- a) 1 (✓)                      b) 2 (✓)                      c) 3                      d) All of the above.

20. Which object can be used instead of iron nail in given circuit so that flow of current remain uninterrupted?

- a) Graphite (✓)                      b) Plastic                      c) Wood                      d) Rubber

21. Which statement is incorrect regarding electroplating?

1. Electroplating is the process of plating one metal on another metal.  
2. It is helpful in disposal of industrial chemicals.

- a) 1 (✓)                      b) 2                      c) Both statements are correct.                      d) Both statements are incorrect.

22. Today teacher asked four students to bring magnetic compass from science lab. Students brought the devices according to table given below. Which student brought the right device?

Amanjot	
Rohit	
Meera	
Gagandeep	

- a) Amanjot                      b) Rohini                      c) Meera (✓)                      d) Gagandeep

**23. A tester is used to check the conductance of two liquids labelled A and B. It is found that the bulb of the tester glows brightly for liquid A, while it glows very dimly for liquid B. You would conclude that:**

- a) Liquid A is better conductor than liquid B. (✓)                      b) Liquid B is better conductor than liquid A.  
c) Both liquids are equally conducting.  
d) Conducting properties of liquids can't be compared in this manner.

**24. In the below given activity two carbon rods from two waste dry cells are connected with battery and then dipped in a bowl containing water. After sometime bubbles of gases appeared around carbon rods. These bubbles are of which gases?**

- a) Nitrogen and Chlorine                      b) Oxygen and Hydrogen (✓)  
c) Oxygen and carbon dioxide                      d) Sulphur dioxide and Oxygen

**25. Prem is having electric fittings in his house, someone advised to used LEDs in place of ordinary bulb. LED is better than ordinary bulb because:**

- a) LED consumes less energy.    b) LED is lightweight    c) LED is long lasting.    d) All of the above. (✓)

**26. Among the substances given below which is not a good conductor of electricity?**

- a) Aluminum                      b) Mercury                      c) Graphite                      d) Distilled water (✓)

## CHAPTER- 17- STARS AND THE SOLAR SYSTEM

**Question 1- Which of the following is NOT a member of the solar system?**

- (a) An asteroid                      (b) A satellite                      (c) A constellation (✓)                      (d) A comet

**Question 2. Which of the following is NOT a planet of the sun?**

- (a) Sirius (✓)                      (b) Mercury                      (c) Saturn                      (d) Earth

**Question 3 Phases of moon occur because**

- (a) We can see only that part of the moon which reflects light towards us. (✓)  
(b) Our distance from the moon keeps changing.  
(c) The shadow of the Earth covers only a part of the moon's surface.  
(d) The thickness of the moon's atmosphere is not constant.

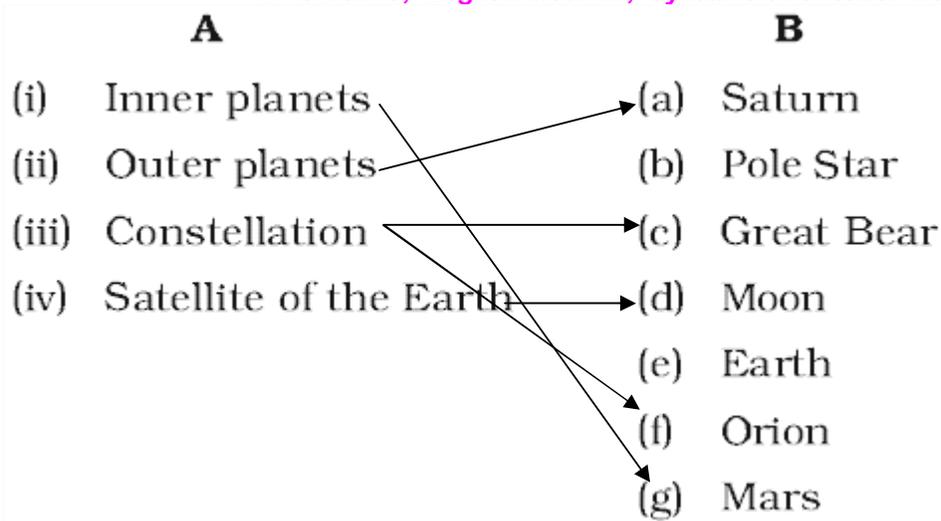
**Question 4. Fill in the blanks.**

- (a) The planet which is farthest from the Sun is Neptune.  
(b) The planet which appears reddish in colour is Mars.  
(c) A group of stars, which appear to form a pattern in the sky is known as a constellation.  
(d) A celestial body that revolves around a planet is known as satellite.  
(e) Shooting stars are actually not stars.  
(f) Asteroids are found between the orbits of Mars and Jupiter.

**Question 5. Mark the following statements as true (T) or false (F).**

- (a) Pole star is a member of the solar system. ( F )  
(b) Mercury is the smallest planet of the solar system. ( T )  
(c) Uranus is the farthest planet in the solar system. ( F )  
(d) INSAT is the artificial satellite. ( T )  
(e) There are nine planets in the solar system. ( F )  
(f) Constellation Orion can be seen only with a telescope. ( F )

**Question 6- Match items in column A with one or more items in column B.**



**Question 7. In which part of the sky can you find Venus if it is visible as an evening star?**

**Answer-** Venus appears in the western sky just after sunset.

**Question 8. Name the largest planet of the solar system.**

**Answer-** Jupiter is the largest planet of the solar system.

**Question 9. What is a constellation? Name any two constellations.**

**Answer-** The stars forming a group that has a recognizable shape is called constellation. For example: Ursa Major and Orion.

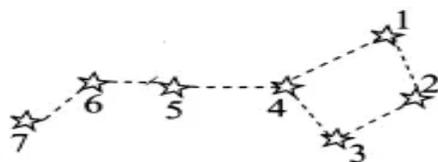
**Question 10- Draw sketches to show the relative positions of prominent stars in**

**(a) Ursa Major and**

**(b) Orion.**

**Answer- (a) Ursa Major**

**(b) Orion.**



**Question 11. Name two objects other than planets which are members of the solar system.**

**Answer-** Satellites and asteroids are the objects that are the members of solar system.

**Question 12. Explain how you can locate the Pole Star with the help of Ursa Major.**

**Answer-** To locate the Pole Star we should look towards the northern part of the sky and identify Ursa Major. We may look at the two stars at the end of Ursa Major. A straight line passing through these stars is

imagined and is extended towards the north direction. This line leads to a star which is not too bright. This is the Pole Star.

**Question 13. Do all the stars in the sky move? Explain.**

**Answer-** No, no star moves in sky. They appear to move from east to west, because the Earth rotates from west to east about its axis.

**Question 14. Why is distance between stars expressed in light years? What do you understand by the statement that a star is eight light years away from the earth?**

**Answer-** The distance of stars is so large that it cannot be expressed in terms of kilometer. That is why very large distances are expressed in another unit known as light year. One light year is the distance travelled by light in one year. If the distance of a star is eight light years, it means that this distance is the distance travelled by light in eight years.

**Question 15. The radius of Jupiter is 11 times the radius of Earth. Calculate the ratio of the volumes of Jupiter and the earth. How many earths can Jupiter accommodate?**

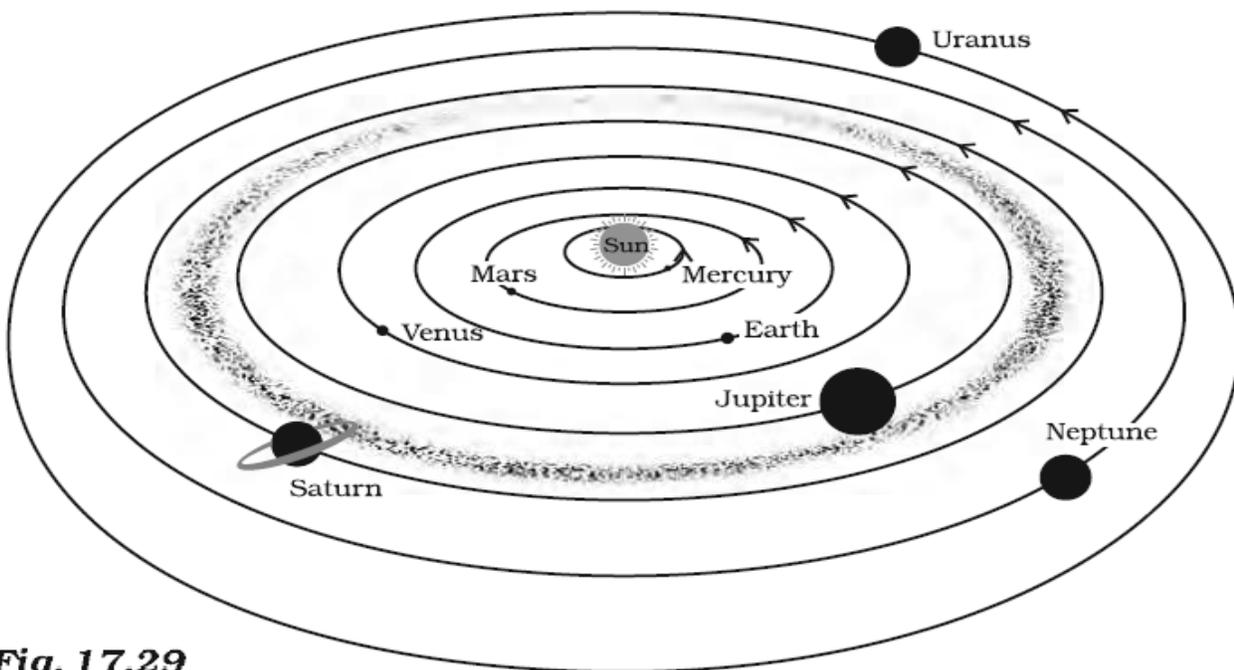
**Answer-** If the radius of the Earth is  $r$ .

Then, radius of the Jupiter is  $11r$ .

So, the ratio of Volume of Jupiter and the earth =  $[\frac{4}{3}\pi(11r)^3] / [\frac{4}{3}\pi (r)^3] = 1331 : 1$

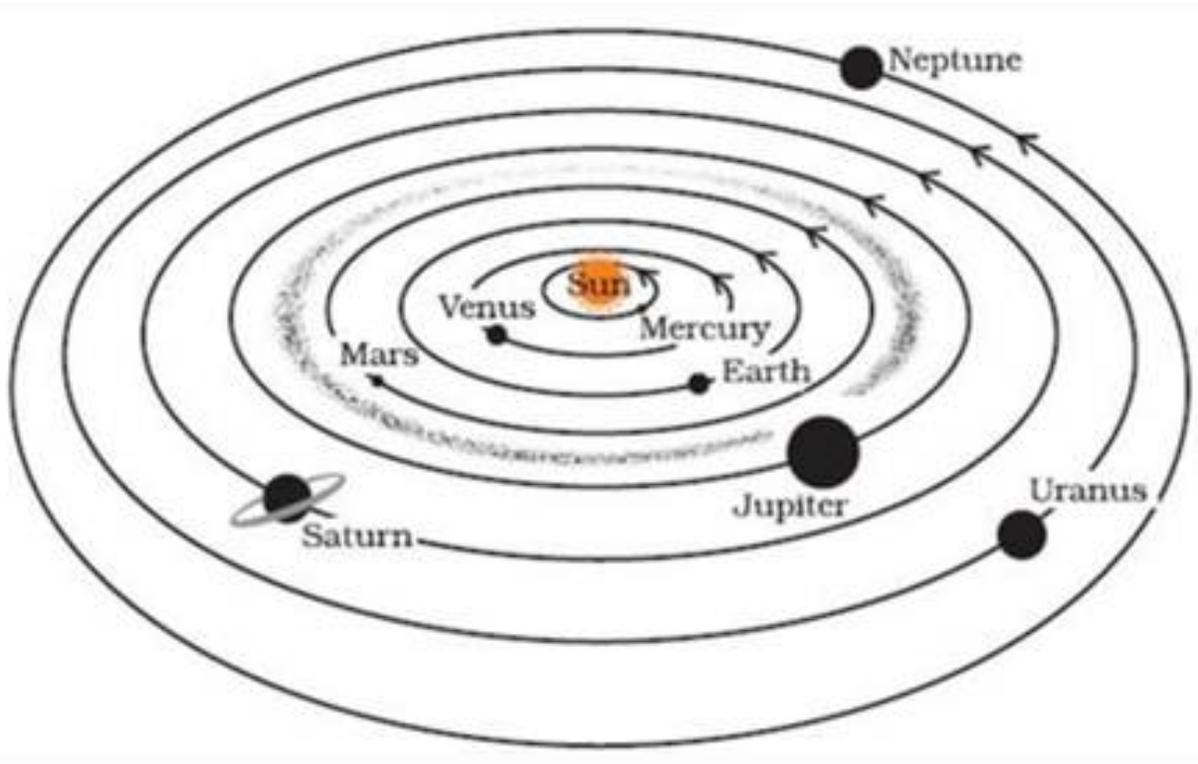
So, we can say that Jupiter can accommodate 1331 earths.

**Question 16. Boojho made the following sketch (fig. 17.29) of the solar system. Is the sketch correct? If not, correct it.**



**Fig. 17.29**

**Answer-** The positions of Mars and Venus should be interchanged. Similarly positions of Neptune and Uranus should be also interchanged.



## ONE MARK MCQs

**1. How many days are there between one complete (full) moon and second moon?**

- a) 30 days                      b) 27 days                      c) 29 days (✓)                      d) 31 days

**2. Which star is the nearest to earth after Sun?**

- a) Alpha Centuri (✓)                      b) Pole Star                      c) Alpha red                      d) None of these

**3. Why does Sun rise from the east and set in the west?**

- a) Because Earth rotates from East to West                      b) Because Earth rotates from West to East (✓)  
c) Because the Earth does not rotate                      d) Because Sun rotates from East to West

**4. What is the direction of rotation of Venus around its axis?**

- a) East to West (✓)                      b) North to South                      c) West to East                      d) South to North

**5. What are the heavenly bodies called that enter the earth's atmosphere at high speed?**

- a) Comet                      b) Pole Star                      c) Meteor (✓)                      d) Meteorites

**6. What is the day called when complete moon is visible?**

- a) Full Moon (✓)                      b) Lunar Eclipse                      c) Amavasya                      d) Solar Eclipse

**7. What is the star called whose position is stationary in the sky?**

- a) Sun                      b) Sirius                      c) Pole Star (✓)                      d) Moon

**8. What is the brightest star in the sky called?**

- a) Pole Star                      b) Sirius (✓)                      c) Alpha Centuri                      d) Moon

**9. Which is the nearest planet from Earth?**

- a) Mercury                      b) Venus (✓)                      c) Mars                      d) Saturn

**10. Which planet is the nearest from Sun?**

- a) Mercury (✓)                      b) Venus                      c) Earth                      d) Saturn

**11. Which is the largest planet of the Solar System?**

- a) Earth                      b) Mars                      c) Jupiter (✓)                      d) Saturn

**12. Which planet is called The Red planet?**

- a) Earth                      b) Venus                      c) Saturn                      d) Mars (✓)

**13. How many stars are there in the Big dipper (saptrishi) constellation?**

- a) Two                      b) seven (✓)                      c) Five                      d) Eight

**14. Which of the following is not a planet of our solar system?**

- a) Mercury                      b) Mars                      c) Moon (✓)                      d) Saturn

**15. Which planet has life?**

- a) Earth (✓)                      b) Venus                      c) Saturn                      d) Uranus

**16. Who was the first astronaut who landed on the moon?**

- a) Newton                      b) Neil Armstrong (✓)                      c) Neil Bohar                      d) Aryabhata

**17. Which heavenly body shines brighter at the night?**

- a) Stars                      b) Planets                      c) Moon (✓)                      d) Earth

**18. Suppose a new planet is found between Uranus and Neptune, then its revolution time around sun will be**

- a) Less than Neptune (✓)                      b) More than Neptune  
c) Similar to Neptune & Uranus                      d) Less than Uranus

**19. Which planet is known as Morning Star?**

- a) Venus (✓)                      b) Jupiter                      c) Pole star                      d) Sun

**20. Sun seems to be larger than other stars because**

- a) Other stars are smaller                      b) other stars are less bright  
c) other stars are far (✓)                      d) None of these

**21. Earlier solar system had nine planets, but now Pluto is not the part of solar system and it has eight planets because**

- a) Pluto has moved far
- b) Pluto has broken
- c) Pluto does not qualify the definition of planet (✓)
- d) none of these

**22. Harjit singh wants to measure the distance between Sun and Earth. Which unit he will use?**

- a) Centimetre
- b) Light year (✓)
- c) Millimetre
- d) Kilometre

**23. We can see moon because**

- a) It reflects the sunlight falling on it (✓)
- b) moon has its own light
- c) Both (a) and (b)
- d) none of these

**24. Which of these statements is wrong?**

- a) Stars produce their light
- b) stars are much farther than the sun
- c) Sun is not a star (✓)
- d) sun produces its own light

**25. Jaspreet sees a question mark shaped constellation in the sky. This constellation is**

- a) Leo major
- b) Orion
- c) Cassiopeia
- d) Big dipper (saptrishi) (✓)

**26. Weather forecast can be done through \_\_\_\_\_?**

- a) Aryabhata satellite
- b) artificial satellite (✓)
- c) INSAT
- d) all of these

**27. Match the following:**

a) Big Dipper

b) Orion

c) Cassiopeia

