

Goa Board
Class VIII Science
Term 1
Sample Paper – 3 Solution

Time: 3 hrs**Total Marks: 100**

SECTION A

1. **Ans.** Correct Option: [C]
Solution: Carbon dioxide

2. **Ans.** Correct Option: [B]
Solution: The mustard plants are the weeds in the wheat field and compete with the wheat for nutrition.

3. **Ans.** Correct Option: [B]
Solution: The figure shown is of a hoe, which is used for removing weeds and for loosening the soil.

4. **Ans.** Correct Option: [A]
Solution: Carrot will become spoiled but not carrot pickle, because there are preservatives in carrot pickle but not in carrot.

5. **Ans.** Correct Option: [A]
Solution: Increased deforestation will lead to less carbon dioxide being used up by plants, resulting in its increased amount in the atmosphere. This will lead to global warming as carbon dioxide traps the heat rays reflected by the Earth. The increase in temperature on the Earth disturbs the water cycle and may reduce rainfall. This could cause droughts.

6. **Ans.** Correct Option: [D]
Solution: There will be minimum soil erosion in case of dense vegetation growth as the roots of plants and trees bind the soil.

7. **Ans.** Correct Option: [C]
Solution: Coir is a natural fibre obtained from plants.

8. **Ans.** Correct Option: [A]
Solution: Thermoplastics are a renewable resource as they can be recycled and reused.

9. **Ans.** Correct Option: [A]

Solution: Magnesium is an important part of the chlorophyll pigment found in green plants.

10.Ans. Correct Option: [B]

Solution: Copper is more reactive than silver, so the displacement reaction will take place between AgNO_3 and copper metal.

11.Ans. Correct Option: [D]

Solution: Carbon is a non-metal, and non-metals do not react with acids.

12.Ans. Correct Option: [C]

Solution: Hydrogen gas is not obtained during petroleum refining.

13.Ans. Correct Option: [C]

Solution: Coal is a fossil fuel which is exhaustible.

14.Ans. Correct Option: [A]

Solution: The Earth rotates around the Sun due to the gravitational force between the Sun and the Earth.

15.Ans. Correct Option: [D]

Solution: The unit of force is newton (N).

16.Ans. Correct Option: [A]

Solution: 0 N, i.e. no force is required to maintain the state of motion. Because the body is moving with constant velocity on a frictionless surface, it will keep on moving with the same velocity unless acted upon by an unbalanced force.

17.Ans. Correct Option: [A]

Solution: The body of fish are streamlined because a streamlined shape offers least resistance due to friction. So, such a shape minimises the water resistance when fish swim in water.

18.Ans. Correct Option: [B]

Solution: Sandpaper produces a lot of friction because it has a rough surface. Friction is more for rough surfaces.

19.Ans. Correct Option: [A]

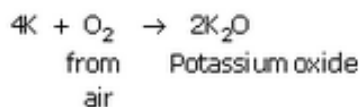
Solution: Sound waves are longitudinal waves.

20.Ans. Correct Option: [C]

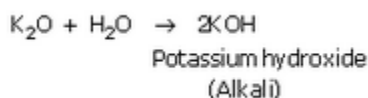
Solution: The amplitude of a sound determines the loudness of a sound. Larger the amplitude of vibration, louder is the sound.

SECTION B

- 21. Ans.** The functions of an ecosystem are
 (i) Regulation of global temperature, precipitation and climatic processes.
 (ii) Regulation of biogeochemical cycles such as the water cycle and carbon cycle.
- 22. Ans.** In this system of irrigation, water falls drop by drop just at the position of the roots. Hence, it is called a drip system.
- 23. Ans.** Yeast reproduces rapidly and produces carbon dioxide during respiration. Bubbles of the gas fill the dough and increase its volume.
- 24. Ans.** Malarial protozoan is the odd one out. This is because it is a pathogen, whereas the others are carriers of diseases.
- 25. Ans.** Plastic handles are preferred for sauce pans because they are bad conductors of heat. Thus, they do not get heated and burn the hands.
- 26. Ans.** Potassium reacts with oxygen in the air to produce potassium oxide (K_2O). K_2O is a basic oxide.



Potassium oxide reacts with water to form an alkali called potassium hydroxide (KOH).



- 27. Ans.** Petroleum is found in the sea or under the Earth. It is found under overlying impervious rocks. It is lighter than water, so it does not get mixed with it and moves upward near the capping rocks. Wells are dug into these rocks to extract petroleum.
- 28. Ans.** A straw is used for drinking purpose by creating suction with the mouth. This causes a decrease in air pressure inside the straw. The pressure acting on the surface of the drink is equal to atmospheric pressure, and this greater pressure pushes the soft drink up the straw into the mouth.
- 29. Ans.** When we rub a matchstick against the rough surface of a matchbox, the friction between the head of the matchstick and the rough side of the matchbox produces heat. This heat burns the chemicals present on the head of the matchstick due to which the matchstick lights up.

- 30. Ans.** The time taken by the sound to travel from the child to the cliff = $6/2 = 3$ sec.
Hence, the distance of the cliff from the child = speed of sound \times time taken to travel to the cliff
= 340×3
= 1020 m

SECTION C

31. Ans.

- (i) If deforestation continues, rainfall and soil fertility will decrease. In addition, there will be increased chances of natural calamities such as floods and droughts.
- (ii) Trees are cut down in several countries, especially the developing ones where wood is used as firewood or turned into charcoal and used for cooking and heating purposes. This leads to deforestation.

32. Ans.

- (i) Damaged seeds become hollow because they are light in weight. Hence, they float on water.
- (ii)
 - a. A seed drill sows the seeds uniformly at proper distances and depths.
 - b. It ensures that seeds get covered by the soil after sowing, thereby preventing damage caused by birds.
 - c. Sowing by using a seed drill saves time and labour.

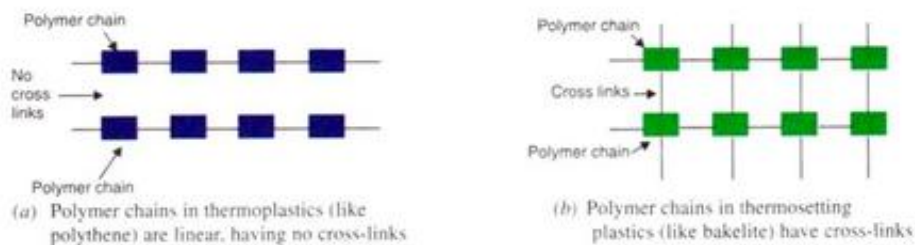
33. Ans.

- (i) An animal suffering from any disease shows the following symptoms:
 - a. It becomes inactive and stops taking food.
 - b. Watering in eyes and excessive secretion of saliva.
 - c. Its milk yield or egg-laying and working capacity reduce drastically.
- (ii) They are all transmitted through air.

34. Ans.

- (i) Diseases in animals can be prevented by
- Proper sanitation
 - Diet control
 - Proper rest
 - Use of veterinary services for diagnosing and treating the disease
 - Excessive vaccination
- (ii) Peas and beans are two examples of leguminous plants.

35. Ans. Thermoplastics can be softened by heat, but thermosetting plastics cannot be softened by heat. This is due to the difference in their structure. Both thermoplastics and thermosetting plastics are made of long chain molecules called polymers. In thermoplastics, the long polymer chains are not cross-linked with one another [Figure (a)]. Due to this, on heating, the individual polymer chains can slide over one another and the thermoplastic material becomes soft and ultimately melts.



On the other hand, in thermosetting plastics, the long polymer chains are cross linked with one another [Figure (b)]. These cross-links prevent the displacement (or sliding) of individual polymer chains on being heated. Due to this, thermosetting plastics do not become soft on heating (or change their shape on heating) once they have been set into a particular shape.

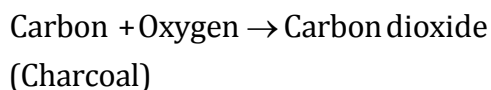
For example, polythene is a thermoplastic having linear polymer chains with no cross-linkages, so it becomes soft on heating. On the other hand, bakelite is a thermosetting plastic having long polymer chains connected through cross-links (or held strongly through cross-links), due to which it does not become soft on heating.

36. Ans. Charcoal is a form of carbon (which is a non-metal). When carbon (charcoal) burns in air, it forms an acidic oxide called carbon dioxide (which is a gas).

(i) To find the nature of carbon dioxide gas, dissolve it in water. Test the aqueous solution of carbon dioxide gas with blue litmus paper and red litmus paper. The aqueous solution of carbon dioxide gas will turn blue litmus paper to red, showing that carbon dioxide is acidic in nature.

(ii) When carbon (or charcoal) burns in air, it combines with the oxygen of air to form carbon dioxide.

The word equation for this reaction is



Carbon dioxide dissolves in water to form carbonic acid (which turns blue litmus paper to red). The word equation for this reaction is



37. Ans. Some important tips can help in conserving fuel:

1. We should immediately switch off the vehicle's engine when not moving even temporarily.
2. Drive at an average and constant speed. Speed variation consumes more fuel.
3. Maintain the vehicle properly and get it serviced at regular intervals.
4. Vehicle pooling is important.

38. Ans.

(i) Yes. Air pressure can tell us about what kind of weather to expect. When a high pressure system is on its way, we can expect cooler temperatures and clear skies. When a low pressure system is coming, we look for warmer weather, storms and rain.

(ii) The soles of the shoes have grooves in order to increase friction between the surface of the floor and the soles of the shoes. It is done to provide the shoes with better grip on the floor, so that one can move safely. This prevents slipping on the floor.

39. Ans.

(i) Aeroplanes and ships have streamlined bodies to reduce drag. A streamlined body experiences minimum resistance when travelling through water or air. It helps to reduce friction. Such a shape is called streamlined.

(ii) It is because friction is caused between the surfaces of our palms when rubbed against each other. This produces heat.

40. Ans.

- (i) Vocal cords are the two ligaments stretched across the larynx in such a way that it leaves a narrow slit between them for the passage of air. When the lungs force air through the slit, the vocal cords vibrate, producing voice.

We can demonstrate the working of the vocal cords to produce sound as follows: Take two rubber strips of the same size. Place these two rubber strips one above the other. Hold the two ends of the rubber strips in your hands and stretch them tight. Keep the stretched rubber strips in front of your mouth and blow air through the thin gap between them (see figure).



As the air blows through the stretched rubber strips, a sound is produced. This sound is produced by the vibrations of stretched rubber strips when air rushes through the thin gap between them. Our vocal cords produce sound in a similar way.

- (ii) Speed of sound in air is 340 m/s.

SECTION D**41. Ans.**

- (i) The excessive use of fertilisers is harmful due to the following reasons:
- It changes the chemical nature of soil and makes the soil less fertile. For example, the excessive use of fertilisers can make the soil highly acidic or alkaline. The highly acidic or alkaline soil becomes less fertile.
 - Excessive use of fertilisers causes water pollution in ponds, lakes and rivers.
 - Fertilisers consist of chemicals such as methane, carbon dioxide, ammonia and nitrogen which emit greenhouse gases leading to global warming and difference in weather and climate changes.

(ii) Differences between manures and fertilisers

Manure	Fertiliser
1. Manure is a natural substance obtained by the decomposition of animal wastes such as cow dung, human waste and plant residues.	1. A fertiliser is a salt or an organic compound.
2. It is not rich in essential plant nutrients such as nitrogen, phosphorus and potassium.	2. Fertilisers are rich in plant nutrients such as nitrogen, phosphorus and potassium.
3. It provides a lot of organic matter such as humus to the soil.	3. A fertiliser does not provide any humus to the soil.

42. Ans. A vaccine is a special kind of preparation (or medicine) which provides immunity against a particular disease.

A vaccine works as follows:

- A vaccine contains the dead or weakened but alive microorganisms of a disease.
- When the vaccine containing dead or alive microorganisms is introduced into the body of a healthy person orally (by mouth) or by injection, the body of that person responds by producing some substances called antibodies in its blood.
- These antibodies kill the 'alive' disease-causing microorganisms present in the vaccine.
- Some of the antibodies remain in the blood of the person for a long time and fight against the same microorganisms and kill them if they happen to enter the body naturally later.
- So, due to the presence of antibodies in the blood, a person remains protected from that particular disease.

43. Ans. The refining of petroleum gives the fractions (or products) such as petroleum gas, petrol, kerosene, diesel, lubricating oil, paraffin wax and bitumen. The important uses of the various fractions of petroleum are given below.

- Petroleum gas:** Petroleum gas is used as a fuel in homes and industry. Petroleum gas is used as a fuel as such or in the form of liquefied petroleum gas (LPG).
- Petrol:** Petrol is used as a fuel in light motor vehicles (such as cars, motorcycles, and scooters). Petrol is also used as a solvent in dry cleaning.
- Kerosene:** Kerosene is used as a fuel in wick stoves and pressure stoves to cook food. It is also used in lanterns for lighting purposes. A special grade of kerosene oil is used as aviation fuel in jet aeroplanes.

- (iv) **Diesel:** Diesel is used as a fuel in heavy motor vehicles (such as buses, trucks, tractors and diesel train engines). It is also used to run pump sets for irrigation in agriculture and in electric generators (to produce electricity on a small scale).
- (v) **Lubricating oil:** Lubricating oil is used for lubrication in machines and engines.

44. Ans.

- (i) The pressure inside our bodies is equal to the atmospheric pressure, and this cancels the pressure from outside. So, we do not get crushed under the high atmospheric pressure all around us.
- (ii) The force of attraction between any two objects possessing mass is called gravitational force. For example, the force acting between any two books or between two students sitting next to each other.
- (iii) The area of the pointed end of the nail is much smaller than that of its head. The same force produces a sufficient pressure to push the pointed end of the nail into the wooden plank.