

Maharashtra State Board

Class VII Science

Board Paper – 2 Solution

I.

1. (d)

Elements are substances which consist of only one kind of atom. They cannot be broken down into simpler substances by either physical or chemical processes. They are classified as metals, non-metals and metalloids.

2. (a)

Afforestation stabilises the ground to prevent surface run off. It prevents soil erosion and the fields do not get barren and infertile, thereby preventing the occurrence of floods.

3. (d)

The length of the shadow decreases and then increases as time passes through the day.

4. (b)

Water does not have taste. It is tasteless.

5. (a)

Tissues together make up an organ.

6. (b)

In *Hydra*, a bud develops as an outgrowth because of repeated cell division at one specific site on the body. These buds develop into tiny individuals, and they detach from the parent body when fully mature and become new independent individuals.

7. (d)

Pasteurisation destroys any disease-causing microorganisms present in milk. It also prevents any new growth of microorganisms in the milk and thus helps in the preservation of milk.

8. (d)

Excessive intake of foods containing sugar causes tooth decay. The germs in the mouth form plaque on the surface of teeth.

9. (c)

Bread will be attacked by fungus when kept outside for two weeks. The fungal growth can be observed as a greenish cottony mass on the bread.

10. (b)

Carrots, green vegetables and milk are rich sources of vitamin A and help to prevent the occurrence of night blindness.

11. (a)

Through the base of the saucepan	Through water	Through air
Conduction	Convection	Convection

Heat travels to the base of the saucepan through conduction and through water and air by convection.

12. (d)

Blood transports digested food, carries oxygen from the lungs to the body cells and collects wastes for removal from the body.

13. (a)

When nylon cloth is rubbed with an amber rod, the nylon cloth develops a positive charge, while the amber rod develops a negative charge.

14. (b)

The speed of sound in a medium depends on the properties of the medium.

15. (a)

Construction of a large number of tube wells and increased deforestation accompanied by scanty rainfall deplete the water table at a place.

II.

16. Mineral acids are also called inorganic acids. It is advised never to taste or touch these acids because they are corrosive and can cause skin burns.

17. Nerves are bundles of nerve fibres enclosed in a sheath of connective tissue in the form of a tube.

There are three types of nerves:

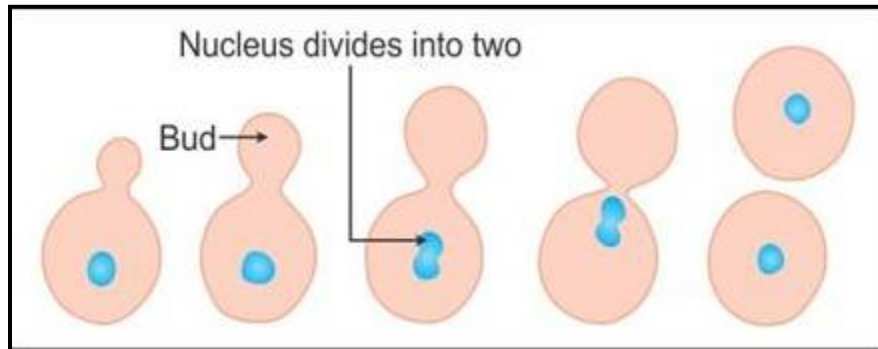
- (a) Sensory nerves
- (b) Motor nerves
- (c) Mixed nerves

18. An electroscope is a device used to detect whether a body is charged or uncharged. It also helps to identify the charge on the body.

Kinds of electroscopes:

- (a) Pith ball electroscope
- (b) Gold leaf electroscope

19. Budding in yeast



20. Heat is a form of energy which can cause the body to either become hot or cold. When heat is absorbed by the body, it becomes hot. When heat is released by the body, it becomes cold. On the other hand, temperature is the degree of hotness or coldness of a body.

III.

21.

- (a) As water flows, salts from the soil in the surrounding areas dissolve in it.
- (b) Rivers, streams and rivulets flow into the sea and thereby add to the salt content of the sea.
- (c) The water of the sea becomes salty. The quantity of salts in the sea gradually goes on increasing.
- (d) At the same time, water in the sea is continuously evaporating. This results in an increase in the concentration of salt in the water. It is about 35 g/l.
- (e) Thus, we can say that the density of seawater is more than the density of ordinary water.

22. Advantages of food preservation:

- (a) Decreases the wastage of food
- (b) Increases the storage period of perishable food items
- (c) Ensures availability of seasonal food items throughout the year

23.

- (a) Sulphur
- (b) Cobalt
- (c) Vitamin B₃

24. Differences between charging by conduction and charging by induction:

Charging by conduction	Charging by induction
1. Charging of a body is done by contact with the body.	1. Contact is not required to charge the body.
2. Charge moves from a charged body to an uncharged body.	2. No charge flows from the charged body to the uncharged body.
3. Some charge is lost in charging.	3. There is no loss of charge in charging.

25.

- (a) In human beings, the vocal cords are responsible for the difference in the male and female voices.
- (b) When the cords are tight and thin, the sound is of a higher pitch or frequency.
- (c) On the other hand, when the cords are loose and thick, the sound is of a low pitch or frequency.
- (d) Men have longer vocal cords than women.
- (e) Therefore, the frequency of the sound produced by women is higher than that of the sound produced by men.

IV.

26.

- (a) The liver is the largest gland in the human body. It is situated in the upper part of the abdomen on the right side.
- (b) The pancreas is located just below the stomach. It secretes pancreatic juice which acts on carbohydrates, fats and proteins converting them into simpler forms.

27.

- (a) Irrigation is the process by which water is supplied to the dry areas through artificial canals and ditches. Irrigation ensures the supply of water all the year round to promote the growth of plants, especially food crops.
- (b) Chlorination is the process in which chlorine is added to water to kill germs and make the water fit for drinking. It is often used in water purification plants to purify the water.

28.

- (a) Sweet potato. Onion, potato and turmeric reproduce vegetatively by stem, while sweet potato reproduces vegetatively by roots.
- (b) Snake. Rabbit, cat and rat are viviparous, while snake is oviparous.
- (c) Pollination. Segmentation, cell division and budding are forms of asexual reproduction, while pollination is involved in sexual reproduction in plants.
- (d) Petal. Stigma, anther and ovary are reproductive parts of a flower, while petal is not involved in reproduction.

29.

- (a) The given figure shows a pinhole camera which is used to take still photographs without a lens. It works on the principle of rectilinear propagation of light.
- (b) Characteristics of an image obtained using a pinhole camera:
- Real and inverted
 - Smaller than the size of the object

30.

- (a) Applications of conduction:
- The handles of cooking vessels are made of ebonite or wood because these materials are poor conductors of heat and therefore do not conduct heat from the vessel to the handle. Hence, we are able to hold the vessel comfortably without getting burnt.
 - Quilts are used in winters to make us feel warm. They are made of fluffy cotton which contains air, and this air does not allow heat to escape from our body to the surroundings. So, we do not feel cold.
- (b) Applications of convection:
- Ventilators are provided near the ceiling in the rooms of our houses. This is because the air we breathe out is warm and rises out of the room through the ventilators. Cool fresh air rushes into the room through the doors and windows.
 - The freezing chest (freezer) of a refrigerator is always fitted near the top in a refrigerator because it cools the remaining space of the refrigerator by convection currents. The air near the freezing chest cools and descends, while the warmer air at the bottom rises.