

# **Maharashtra State Board**

## **Class VIII Science**

### **Sample Paper – 1 Solution**

I.

1. (c)

This occurs because like magnetic poles repel and unlike magnetic poles attract each other.

2. (a)

When the nozzle of a syringe is dipped in a liquid and its piston is withdrawn, the pressure inside the syringe is lowered.

3. (d)

Bacterial attack is an immediate cause of the disease and not a contributory cause.

4. (c)

In decomposition reactions, a single reactant decomposes to form two or more products.

5. (b)

Maximum irrigation is needed during dry summers since maximum rate of evaporation of water from the soil and plant leaves occurs in this season.

6. (a)

Turning and loosening of soil brings the lower layers of soil which are nutrient-rich upwards so that plants can use these nutrients.

7. (a)

Wall is a rough surface and irregular reflection takes place from its surface and light is diffused in all directions.

8. (d)

Regular reflection takes place at smooth and polished surfaces.

9. (c)

According to J.J Thomson, electrons are embedded in a positively charged sphere.

10. (b)

Animals reared at home or in farms, have to be provided with proper food, shelter and care. This will ensure good health of the animals. Only then, will they be able to provide us with good quality animal products.

**11. (d)**

The full form of UNEP is United Nations Environment Programme. It is an agency that takes care of the environment.

**12. (b)**

Hydrogen gas is not evolved when a metal reacts with nitric acid because nitric acid is a strong oxidizing agent; it oxidizes hydrogen to produce water.

**13. (a)**

Metals can be beaten to thin sheets. This property is known as malleability.

**14. (c)**

Graphite is a good conductor of electricity.

**15. (c)**

Soft iron core is used in solenoid to make electromagnets because soft iron loses all its magnetism when current in the coil is switched off.

**II.**

**16.** A comet is a member of the solar system which revolves around the sun in highly elliptical orbits. It appears as a bright head with a long tail.

**17.** The steps to conserve wildlife are as follows:

- i. Maintaining habitats of animals.
- ii. Establishment of national parks, sanctuaries, biosphere reserves.

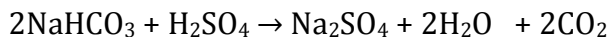
**18.** Iron being a metal is highly malleable i.e. it can be easily hammered into thin sheets. Iron is hard and strong. Hence, iron is preferred.

**19.** Carbon monoxide is produced from incomplete burning of fuels such as petrol and diesel. It is a poisonous gas. It reduces the oxygen carrying capacity of the blood.

**20.** Petroleum is found in the sea or under the earth. They are found under overlying impervious rocks. It is lighter than water; so, it does not get mixed with it and moves upwards near capping rocks. Wells are dug into these rocks to pull out the petroleum.

### III.

- 21.** The fire extinguisher consists of a cylinder filled with a solution of sodium bicarbonate. It also consists of a capsule of dilute sulphuric acid. When the knob is pressed, the acid in the capsule spills on the sodium bicarbonate. As a result of the chemical reaction that takes place, carbon dioxide is produced and it gushes out of the cylinder.



- 22.** As the implements are needed in agricultural field to carry out activities, the precautions that should be taken are -

- i. After using the plough or spade, they should be washed properly as it comes in contact with a lot of mud.
- ii. The tools should be oiled properly and should be sharpened for better use.
- iii. They should be kept away from termites and iron rust because they are attacked when kept in damp places and resting and termites shorten the life of the tools.

**23.**

- i. Suspend a magnet freely from a wooden stand with a thread.
- ii. When it comes to rest in the north-south direction, bring the north pole of another magnet near the north pole of the suspended magnet. Then, the north pole of a freely suspended magnet will be repelled.
- iii. Repeat the same process with south poles such that the south poles will repel. This shows that like poles repel each other.

- 24.** A homogenous mixture of two or more metals or of metals and non-metals is called an alloy.

The characteristics of alloys are as follows:

- i. Alloy contains metals in specific proportions.
- ii. In an alloy, physical properties change but chemical properties remain the same.

- 25.** No, Rhizobium is not a free living bacterium. It is found in the root nodules of leguminous plants such as peas and beans. It lives there in a symbiotic relationship with the leguminous plants

#### IV.

26.

- i. Gene banks preserve genes of different organisms. If a particular type of organism becomes extinct, its genes are preserved in these banks. There are many forms of gene banks e.g. seed bank, sperm bank. If a type of seed becomes endangered or extinct due to the use of hybrid varieties or misuse, they would be preserved in these types of gene banks. Thus, we can prevent their extinction.
- ii. Botanical gardens are a unique environment to raise public awareness and help people understand the importance of biodiversity; also, to educate people about the threats it currently faces. Gardens can provide expert advice, practical assistance, databases and information needed to manage plants with regards to their conservation and sustainable use.

27.

- i. Radioactive elements like Uranium, Barium and Krypton used in reactors should be kept in containers that are made of thick lead walls so that they do not leak out.
- ii. People working in these plants should wear jackets and gloves made of lead linings so that the radiations do not penetrate into their body.
- iii. The power plant should be handled from a distance.
- iv. The power plant should be located at far off distances from the city.
- v. A proper arrangement should be made and procedure should be carried out.

28. When a piece of metal like soft iron is placed inside a solenoid and current is passed through it, it gets magnetised. The magnet so formed, is called an electromagnet.

Electromagnet is a temporary magnet. Its polarity can be reversed by reversing the direction of the current whereas the polarity of a permanent magnet is fixed.

Uses: - Electric crane, Electric bell.

29. The differences between plant and animal cells include -

Sr. No.	Plant cell	Animal cell
1	Plant cells have an outer, rigid cell wall.	Animal cells lack cell wall.
2	Plastids are present in plant cell.	Plastids are absent in animal cell.
3	Large, central and permanent vacuole is present.	Animal cells have small and many vacuoles which may be temporary.
4	Plant cell is generally larger than animal cell.	Animal cell is smaller in size.

**30. Properties of nucleus:**

- i. Nucleus is a small positively charged body present at the centre of the atom.
- ii. It carries almost the entire mass of the atom.
- iii. It contains neutrons and protons.
- iv. The volume of the nucleus is negligibly small as compared to the volume of the atom.
- v. The size of the nucleus is very small as compared to the size of the atom.
- vi. The electrons revolve around the nucleus in circular orbits.