

Maharashtra State Board

Class VIII Science

Sample Paper – 3 Solution

I.

1. (b)

Nickel is a magnetic material, while cobalt, plastic and rubber are non-magnetic materials.

2. (a)

Pressure = Force/Area, i.e. pressure is directly proportional to force. Therefore, when the applied force is doubled, the pressure also doubles.

3. (c)

Rabies is caused by the bite of an infected dog, monkey, cat or rabbit. Symptoms of rabies include fever, severe headache, rigid, painful and contracted throat muscles, inability to swallow any liquid, hydrophobia, delirious condition and flaccid limbs and spasms.

4. (b)

When quicklime (calcium oxide) is added to water, calcium hydroxide is formed. This reaction is exothermic; so, heat is evolved during this reaction.



5. (d)

Different crops are sown differently in the soil. Crops such as rice are sown by transplanting seedlings. Sugarcane is planted by making furrows in the soil. Ladyfingers are sown on ridges, while green leafy vegetables are grown in seedbeds.

6. (a)

Asteroids are small remnants of heavenly bodies revolving around the Sun between the orbits of Mars and Jupiter.

7. (a)

The two mirrors in a periscope are placed parallel to each other so that the rays of light emerging out of the periscope are parallel to the rays incident on the top window of the periscope. This enables us to view the location of the object clearly.

8. (c)

The treaty at the Earth Summit was held at Rio de Janeiro in Brazil in 1992. The treaty emphasises the need for nurturing biodiversity.

9. (b)

$$\begin{aligned}\text{Atomic mass number} &= \text{Number of protons} + \text{Number of neutrons} \\ &= 11 + 12 \\ &= 23\end{aligned}$$

10. (d)

Oyster	Pearl
Sheep	Wool
Camel	Hair
Silkworm	Silk

11. (c)

Biogas is a renewable source of energy. On burning, renewable sources of energy do not produce any polluting substances. Hence, they do not cause pollution.

12. (c)

Red phosphorus is a non-metal and is used in making safety matches, crackers, germicides and explosives.

13. (a)

Helium, argon, neon and xenon are inert gases. Helium is used to obtain very low temperatures. Argon is used in electric bulbs. Neon is used in neon lights and hoardings which display advertisements.

14. (b)

The diamond crystal has tetrahedral arrangement of atoms. In the diamond crystal, every carbon atom has four atoms of carbon at specific distances around it.

15. (a)

Kaolin or China clay is found near the Kaolin Mountain in China. It is white and is used to make crockery, tiles for bathrooms, tanks and laboratory apparatuses.

II.

16. On some days, Venus is seen very bright just before sunrise. Hence, it is called the Morning Star.

On some days, Venus is seen very bright just after sunset. Hence, it is called the Evening Star.

17.

(a) Plant : Producer :: Bacteria : **Decomposer**

(b) Zoological gardens : Animals :: **Botanical gardens** : Plants

- 18.** Ships are coated with enamel paints to prevent them from corrosion. The enamel paints contain metals such as zinc or magnesium which prevent the corrosion of metal sheets by salty seawater.
- 19.** Solid carbon dioxide is called dry ice. Dry ice is used for the preservation of foodstuffs by maintaining a very low temperature below 0°C.
- 20.** To meet the energy crisis, the government is focusing on the following points:
- (a) Finding out new sources of energy
 - (b) Educating the public to use non-renewable sources of energy sparingly and economically

III.

- 21.** When the candle is lit, the heat of the candle melts the nearby wax. The wax in the candle melts as it has a low melting point. The melted wax is absorbed by the candle wick. The melted wax burns on the wick producing carbon dioxide and water. The incomplete burning of the candle produces carbon monoxide and carbon particles. Thus, we see that when a candle burns, its state changes to solid, liquid and gaseous state.
- 22.** After threshing, the grains get mixed with husk or chaff. Although the grains are free from their cobs or ears, the inedible portion needs to be removed. This unwanted matter can be separated by the process of winnowing. Therefore, for cleaning the produce, winnowing is done after threshing the grains.
- 23.** Advantages of a horseshoe magnet:
- (a) A horseshoe magnet can be used when a strong magnetic field is required in a small space.
 - (b) Electronic valves in a radar set need powerful horseshoe magnets for their working.
 - (c) Horseshoe magnets are also used in electric motors and generators.
- 24.** Uses of non-metals:
- (a) Graphite is used as the core or lead in pencils.
 - (b) Silicon is used in solar cells.
 - (c) Sulphur is used in the production of acids and gunpowder.
- 25.** Lac is a red-coloured substance secreted by the lac insect. The insect lives on cacti and on the 'Flame of the Forest' tree or palas tree.
- Uses of lac:
- (a) Lac is used as a sealing material for sealing envelopes.
 - (b) It is also used to make beads and costume jewellery.

IV.

26.

(a) Artificial satellites are satellites in the sky which orbit the Earth. They are launched by man for the benefit and progress of mankind. Aryabhata, INSAT, IRS, Kalpana-1, GSAT-3 (EDUSAT) and Bhaskara are some artificial satellites launched by India.

(b) Uses of artificial satellites:

- Weather forecasting
- Space research

27.

(a) The image obtained in a plane mirror is laterally inverted with respect to the object. When the word **AMBULANCE** is written as **AMBULANCE** on an ambulance, the driver of a car in front of the ambulance will read it in his rear view mirror as **AMBULANCE**. He will know that the ambulance is following his car and will give way for it to pass.

(b) A paint which shines as light falls on it is called a fluorescent paint. It is applied along the sides of the road. The paint can be easily seen in reflected light and serves to guide the driver of a vehicle when it is dark.

28. Preventive measures for diarrhoea:

- (a) Give oral rehydration solution (ORS) therapy
- (b) Use boiled and cooled water for drinking
- (c) Maintain personal hygiene and cleanliness
- (d) Prevent dust, flies and other dirt from settling on food
- (e) Keep the cooking or kitchen area clean
- (f) Wash fruits and vegetables before use

29.

(a) The given figure shows an animal cell because the cell wall is absent in the given cell.

(b) Label A correctly denotes mitochondria.

(c) Functions of mitochondria: Mitochondria produce energy from the food present in the cell. This energy is supplied to the cell to carry out various metabolic activities.

30.

(a) Differences between proton and electron:

Proton	Electron
1. Proton is a positively charged particle in an atom.	1. Electron is a negatively charged particle in an atom.
2. Protons are present in the nucleus of an atom.	2. Electrons revolve around the nucleus of the atom in specific orbits.

(b) Differences between atomic number and atomic mass number:

Atomic number	Atomic mass number
1. Atomic number is the number of electrons or protons in an atom.	1. Atomic mass number is the sum of the number of protons and neutrons in the nucleus of an atom.
2. All isotopes of the same element have the same atomic number.	2. Different isotopes of the same element have different atomic mass number.
3. Atomic number is represented by the letter Z.	3. Atomic mass number is represented by the letter A.