

Science Sample Papers for Class 10 CBSE

General Instructions to be followed by the students are-

1. This sample paper consists of four sections.
2. Section-A includes questions from **1 to 9** each of carrying one mark.
3. Section-B includes questions from **10 to 16** each of carrying two mark.
4. Section-C includes questions from **17 to 22** each of carrying three mark.
5. Section-D includes questions from **23 to 27** each of carrying five mark.

Section-A (MCQ- carry 1 mark each)

1. Some crystals of ferrous sulphate were dissolved to distilled water. The colour of the solution obtained was

- a) pale green
- b) light green
- c) dark green
- d) dark blue

2. In a litmus test it is observed that an aqueous solution of acetic acid turns

- a) Blue litmus red
- b) Red litmus blue
- c) Red litmus colourless
- d) Blue litmus colourless

3. A student prepared an aqueous solution of CuSO_4 in beaker X and an aqueous solution of FeSO_4 in beaker Y. After about 10 hours he observed that the solutions in X and Y respectively appear:

- a) Blue and green
- b) Colourless and pale green
- c) Greenish and colourless
- d) Colourless and light blue

4. On adding acetic acid to sodium hydrogen carbonate in a test tube, a student observes

- a) No reaction
- b) A small smell of vinegar
- c) Bubbles of a colourless and odourless gas
- d) A colourless gas with pungent smell

5. The aqueous solution of copper sulphate and zink sulphate appear

- a) Blue and green respectively
- b) Blue and colourless respectively
- c) Blue and brown respectively
- d) Green and colourless respectively

6. A student obtained a sharp inverted image of a distant tree on a screen placed in front of the concave mirror. He then removed the screen and tried to look into the mirror. He would now see

- a) A very blurred image on the wall opposite to the mirror
- b) A highly diminished inverted image of the tree at the focus of the mirror

- c) An erect and magnified image of the tree in the mirror
- d) No image as the screen has been removed

7. If you are to determine the focal length of a convex lens, you should have

- a) A convex lens and a screen
- b) A lens holder, a screen holder and a scale
- c) A convex lens, a screen holder for them and a scale
- d) A convex lens and a lens holder

8. To determine focal length of a concave mirror a student obtains the image of a well lit distant object on a screen. To determine the focal length of the given concave mirror he needs to measure the distance between

- a) Screen and the object
- b) Mirror and the object
- c) Mirror and the screen
- d) Both (a) and (c)

9. Parallel light rays from a distant incident on a device 'X' form a point size image on a screen. The device 'X' must be

- a) A concave lens
- b) A convex lens
- c) A concave mirror
- d) Either (b) or (c)

Section-B (Very Short Answer carry two mark each)

10. States the types of mirrors used for (i) headlight and (ii) rear view mirrors, in cars and motorcycles. Give reason to justify your answer in each case

11. How are fossils formed? Describe, in brief two methods of determining the age of fossils.

12. A 9 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 54 cm. The distance of the object from the lens is 50 cm. Find the position, size and nature of the image formed, using the lens formula.

13. What is meant by term specialisation? List four factors which would lead to specialisation.

14. What are isomers? Draw the structures of two isomers of butane, C_4H_{10} . Why can't we have isomers of first three members of alkane series?

15. Distinguish between esterification and saponification reaction of organic compounds with the help of the chemical equation for each. What is the use of (i) esters and (ii) saponification process?

16. What is AIDS? Which microbes is responsible for AIDS infection? State one mode of transmission of this disease. Explain in brief one measure for the prevention of AIDS.

Section-C (Short Answer carry three mark each)

17.a) How many periods are there in the modern periodic table of elements?

b) How do the atomic size and metallic character of elements vary as we move from left to

right in a period?

c) How do atomic radius, valency and metallic character vary down a group?

18. Distinguish between homologous organs and analogous organs. In which category would you place wings of a bird and wings of a bat? Justify your answer giving a suitable reason.

19. "An individual cannot pass on to its progeny the experiences of its life time." Justify the statement with the help of an example and also give the reason for the same.

20. State in brief the changes that take place in a fertilized egg (zygote) till birth of the child in the human reproductive system. What happens to the egg when it is not fertilised?

21. List in tabular form three physical and two chemical properties on the basis of which ethanol and ethanoic acid can be differentiated.

22. Define the terms pollination and fertilization. Draw a diagram of a pistil showing pollen tube growth into the ovule and label the following: Pollen grain, male gamete, female gamete, ovary.

Section-D (Long Question- carry 5 marks each)

23. Three students X, Y, Z are finding the focal length of the given concave mirror by obtaining the image of the object selected by them. X obtains the image of the grill of the nearest window of the lab. Y obtains the image of a white painted building near the lab and Z obtains a point size image of the sun.

24. While performing the experiment of determining the percentage of water absorbed by raisins, the extra water left on the surface of soaked raisins is removed before final weighing.

25. After observing the prepared slides of binary fission in amoeba and budding in yeast following observations were reported. Draw Single cells of amoeba and yeast were undergoing binary fusion and budding respectively.

26. List the sign conventions that are followed in case of refraction of light through spherical lenses. Draw a diagram and apply these conventions in determining the nature and focal length of a spherical lens which forms three times magnified real image of an object placed 16 cm from the lens.

27. What are soaps and detergent chemically? Explain the action of cleaning by soaps. State the reasons why we can wash our clothes even in hard water using detergents.