

Sample Paper – 2008
Class – Science
Class – X

Time 2:30

Max. Marks: 60

General Instructions

SECTION A

1. Write the relation between 1 joule, 1 volt and 1 coulomb. 1
2. Name the compound formed when gypsum is heated at 373 K in a kiln. 1
3. Identify the functional group present in propanone (CH_3COCH_3) 1
4. Name two fossil fuels. 1
5. Why does a ray of white light split up into different colours on passing through a glass prism? 1
6. A shiny brown element X on heating in air becomes black in colour. Name the element X and the black compound produced. Write the equation for the reaction taking place. 1
7. Give reasons:
 - (a) Platinum, gold and silver are used in making ornaments. 2
 - (b) Aluminium is a highly reactive metal, yet it is used to make cooking vessels.
8. Name the common source which powers both wind energy and ocean thermal energy. Write one main advantage of using Ocean Thermal Energy Conversion System. What is the essential characteristic of liquids used in Ocean Thermal Energy Conversion System? 2
9. Name the commercial unit of electrical energy. Derive its relation with SI unit of energy. 2
10. State Mendeleev's periodic law. Mention two limitations of his method of classification. 2
11. Why does the sun look reddish at the time of sunrise and sunset? 2
12. Why do the atomic size decrease along the period and increase along a group? 2
13. An electrician assembling a household circuit uses a long thick copper wire with green insulation and a short wire made of copper-tin alloy. What are the two wires called? Mention the importance of each wire in an electric circuit. How are the two wires connected in the circuit? 3
14. Draw an apparatus to show that acid solution in water conducts electricity. Why

- doesn't this apparatus work with alcohol and glucose solutions? 3
15. (a) Draw the structural isomers of pentane.
(b) Draw the electron dot structure of N_2 molecule. 3
16. (a) How is the concentration of hydronium ions affected when a solution of an acid is diluted.
(b) How is the concentration of hydroxide ions affected when excess of base is dissolved in a solution of sodium hydroxide?
(c) Why does dry HCl gas not change the colour of dry litmus paper? 3
17. (a) Explain the formation of sodium chloride with the help of electron dot structure.
(b) Why sodium is kept immersed in kerosene oil?
(c) Why do ionic compounds have high melting points?
- or
- (a) Explain the cleansing action of soap.
(b) What are the advantages of soaps over detergents. (Give two points). 5
18. For an object placed at a distance of 20 cm from the pole of a mirror, an image is formed 40 cm further away from the object on the same side.
(a) What is the nature of the mirror?
(b) Is the image formed real or virtual?
(c) Draw a ray diagram to show the image formed.
(d) Calculate the focal length of the mirror used.

or

An object is placed 12 cm away from the optical centre of a lens. Its image is formed exactly midway between the optical centre and the object.

- (a) What is the nature of the lens?
(b) Is the image formed erect or inverted?
(c) Draw a ray diagram to show the image formed.
(d) Calculate the focal length of the lens used. 5

SECTION B

19. A student dipped the heads of a cockroach and a rat in water. After five minutes, he found that only one of the two animals survived. Which of the two animals might have

- survived? 1
20. Ultraviolet rays are said to be harmful to human beings, but we drink water from water filters in which such rays are used. Why is drinking this treated water not harmful? 1
21. Name excretory units of kidney. 1
22. How does development affect the environment? How can a balance be struck between the environment and development? Explain briefly. 2
23. What is greenhouse effect? Name two greenhouse gases. 2
24. Write the full form of IUCD. Name any one IUCD and describe its function. 2
25. List four functions of blood. Why does blood look red? Which chamber of human heart receives oxygenated blood from lungs? 3
26. Explain the importance of fossils in deciding evolutionary relationships. 3
27. (a) Draw a cross-section of a leaf to show its internal parts.
(b) Mention three main events that take place during photosynthesis.

or

- (a) Draw a labelled diagram of human female reproductive system,
(b) Describe the events that take place in the uterus of a woman after fertilisation of egg has taken place. 5