

Science and Technology - I**MCQ Single Correct****5 x 1 = 5**

- 1) _____ prevents the rusting of iron. **1.0**
- A) Copper
 - B) Zinc
 - C) Aluminium
 - D) Silver
- 2) A solution of CuSO_4 in water is _____ in colour. **1.0**
- A) pink
 - B) blue
 - C) colourless
 - D) green
- 3) 2 ml of ethanoic acid was taken in each of test tubes A, B, C and 2 ml, 4 ml, 6 ml of water was added respectively to them. A clear solution is obtained in _____. **1.0**
- A) test tube A
 - B) test tube B
 - C) test tube C
 - D) all the test tubes
- 4) The number of electrons in the outermost shell of alkali metals is _____. **1.0**
- A) 1
 - B) 2
 - C) 3
 - D) 7
- 5) Reddish brown deposit formed on iron nails kept in a solution of copper sulphate is **1.0**
- A) Cu_2O
 - B) Cu
 - C) CuO
 - D) CuS

Very Short Description**5 x 1=5**

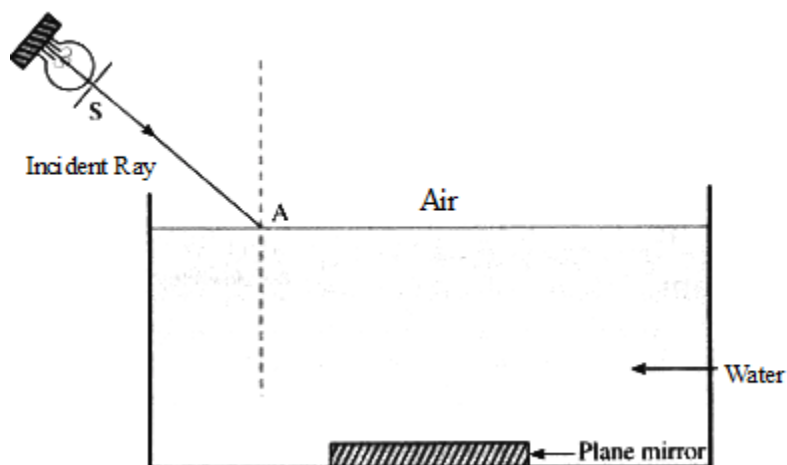
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|-----|---|-----|
| 6) | Name the following : The higher homologue of hexane. | 1.0 |
| 7) | Will the velocity of light be same in all media? | 1.0 |
| 8) | State number of electrons in the outermost orbit of carbon and valency of carbon. | 1.0 |
| 9) | Name the group to which sodium and lithium belong. | 1.0 |
| 10) | What is a launch vehicle? | 1.0 |

Short Description**5 x 2 =10**

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|-----|--|-----|
| 11) | Draw neat labelled diagrams : Types of lenses. | 2.0 |
| 12) | Doctor has prescribed a lens having power+ 1.5D. What will be the focal length of lens? What is the type of the lens and what must be the defect of vision? | 2.0 |
| 13) | Is the electric potential difference across each appliance (in a domestic electric circuit) the same? | 2.0 |
| 14) | A washing machine rated 300 W operates one hour/day. If the cost of a unit is ` 3.00, find the cost of the energy to operate the washing machine for the month of March. | 2.0 |
| 15) | Which one of ethanoic acid and hydrochloric acid is stronger? | 2.0 |
| 16) | Define : Alkene | 2.0 |
| 17) | An electric bulb is connected to 250 volts. The current passing through it is 0.27 A. What is the power of the bulb ? | 2.0 |
| 18) | What is bauxite? What are the main impurities found in this ore ? | 2.0 |

Medium Description**5 x 3=15**

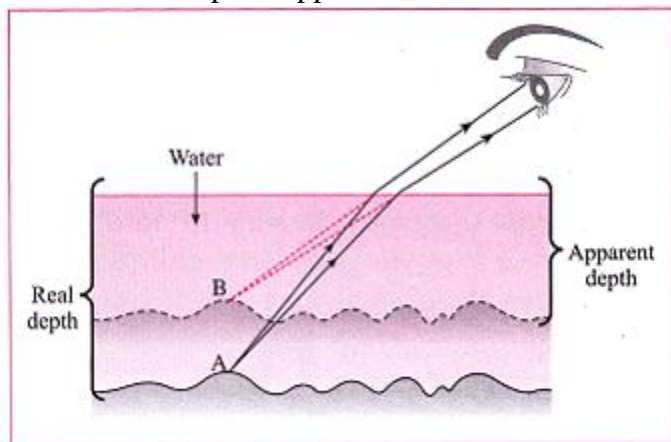
- 19) A plane mirror is kept at the bottom of a trough with water in it as shown in the following figure. The ray of light emerging from a source at the point S outside the trough, reaches the point A on the surface of water. Draw a neat ray diagram to show the subsequent path of light and complete the ray diagram. **3.0**



- 20) When are bifocal lenses used in spectacles ? **3.0**
- 21) Take a feather and a paper. Allow them to fall to the ground simultaneously. Which will reach the ground earlier? Why? **3.0**
- 22) Give scientific reasons : **3.0**
A concave lens diverges the rays of light falling on it.
- 23) What are the difficulties faced by a colour-blind person? **3.0**
- 24) Write the IUPAC names of the following structural formulae. **3.0**
$$\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_2 - \text{CH}_2 - \text{CH}_3 \\ | \\ \text{Cl} \end{array}$$
- 25) State the factors on which the magnetic field due to a current carrying conductor depends and how it depends. **3.0**

- 26) Give scientific reason:
The bottom of a pond appears raised.

3.0



Long Description

1 x 5=5

- 27) Explain the term free fall and state the corresponding kinematical equations of motion in the usual notation. 5.0
- 28) Explain the factors affecting the value of g. 5.0