

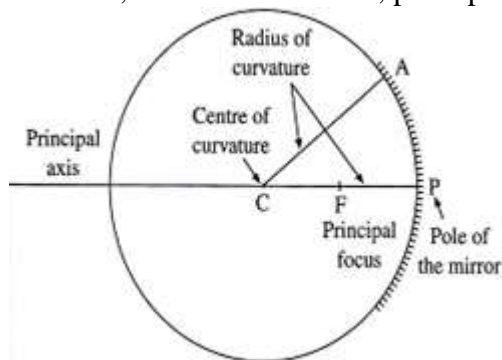
Science and Technology - I**Write the correct alternative :****5 × 1=5**

- 1) The absolute refractive index **1**
- A) is expressed in diopetre
 - B) is expressed in m/ s
 - C) of air is about 4/3
 - D) has no unit
- 2) The direction of the magnetic field around a straight conductor carrying current is given by ____ **1**
- A) the right hand thumb rule
 - B) Fleming's left hand rule
 - C) Fleming's right hand rule
 - D) none of these
- 3) Alkaline earth metals have valency 2. This means that their position in the modern periodic table is in ____ **1**
- A) Group 2
 - B) Group 16
 - C) Period 2
 - D) d-block
- 4) The latent heat of fusion of ice is ____ **1**
- A) 540 cal/g
 - B) 80 cal/g
 - C) 800 cal/g
 - D) 4 cal/g
- 5) The image formed by a concave lens is always ____ **1**
- A) virtual and erect
 - B) real and erect
 - C) virtual and inverted
 - D) real and inverted

Answer the following :

5 × 1=5

- 6) What happens in a decomposition reaction? **1**
- 7) The element with electronic configuration (2,7). **1**
- 8) Find the odd one out: **1**
Methane, butane, benzene, sodium chloride
- 9) Indicate the following terms related to spherical mirrors in figure: pole, centre of curvature, radius of curvature, principal focus. **1**



- 10) Translate the following statements into chemical equations and then balance them : **1**
Iron reacts with sulphuric acid.

Answer the following (any Five) :

5 × 2=10

- 11) Define angle of incidence and angle of refraction. **2**
- 12) With reference to the functioning of the pupil in the human eye, what is adaptation? **2**
- 13) From the following set of the elements and their atomic masses obtain Dobereiner's triad : **2**

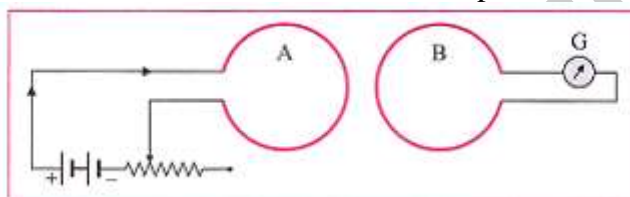
Element	Br	K	I	Cl
Atomic mass	79.9	39	126.9	35.5

- 14) What happens when ethanol is reacted with sodium? **2**
- 15) When is air said to be unsaturated with, water vapour? **2**
- 16) State Fleming's right hand rule. **2**
- 17) Give scientific reason : **2**
Zero group elements (inert gases) are called noble gases.
- 18) Give scientific reason : **2**
While going down the second group, the reactivity of the alkaline earth metals increases.

Answer the following (any Five) :

5 × 3=15

- 19) Which type of telescopes are orbiting around the earth? Why is it necessary to put them in space? **3**
- 20) State Newton's universal law of gravitation. Express it in mathematical form. **3**
- 21) What is meant by the minimum distance of distinct vision ? **3**
- 22) Define the refractive index of the second medium with respect to the first medium.
OR
What is meant by refractive index ? **3**
- 23) Give scientific reasons :
A convex lens converges the rays of light falling on it. **3**
- 24) What happens when vegetable oil is hydrogenated? Write the balanced chemical equation. **3**
- 25) Explain the term corrosion with a suitable example.
OR
What is corrosion? **3**
- 26) Observe the following figure. If the current in the coil A is changed, will some current be induced in the coil B ? Explain. **3**



Answer the following (any One) :

1 × 5=5

- 27) Discuss the trends in the variation of metallic and nonmetallic properties in a period and in a group. **5**
- 28) What are the effects of a force acting on an object? **5**