

**Section – IV (3 x 8 = 24 Marks)**

**14**

1. Explain the formation of mirages?
2. How do you correct the eye defect Myopia?
3. Explain the correction of the eye defect Hypermetropia.
4. Explain the formation of rainbow.
5. Deduce the expression for the equivalent resistance of three resistors connected in series. (OR) Derive  $R_{eq}=R_1+ R_2+ R_3$

**15**

1. Explain the significance of three Quantum numbers in predicting the positions of an electron in an atom.
2. Define the modern periodic Law. Discuss the construction of the long form of the periodic table.
3. What is a periodic property? How do the following properties change in a group and period? Explain.
4. Explain the formation of  $BeCl_2$  molecule using hybridization.
5. Explain the formation of  $BF_3$  molecule using hybridization.

**16**

1. Suggest an experiment to prove that the presence of air and water is essential for corrosion. Explain the procedure
2. Compounds such as alcohols and glucose contain hydrogen but are not categorized as acids. Describe an activity to prove it.
3. What is meant by “water of crystallization” of a substance? Describe an activity to show the water of crystallisation.
4. Show that acids produce hydrogen gas when react with metals

**Section – III (3 x 4 = 12 Marks)**

**11**

**Section - III**

- Specific heat Table
- $p^H$  values Table
- Refractive index Table
- Electronic configuration of an element/ Atomic number based
- Resistivity values Table
- Ores/formula/metal Table

**12**

**Section - III**

- Acid solution in water conducts electricity
- Ray diagrams of convex lens
- Moeller diagram
- Electric motor
- AC Generator
- Reverberatory furnance
- (s-orbital, p-orbital, soap molecule, Type of lenses, Lewis notation - 1 Mark)

**13**

**Section - III**

- Specific heat applications
- $p^H$  applications
- Uses of washing soda and baking soda
- Total internal reflection of applications
- Appreciation of Ciliary muscles
- Appreciate role of the ‘octet rule
- Use fuses in household circuits