

Que-1. Answer any 9 questions. Each question carries 1 mark [09]

1. What is Zeroth law of thermodynamics?
2. What is Lambert's law?
3. Give the definition of phosphorescence and fluorescence?
4. $\text{H}_2\text{O}_2(l) \rightarrow \text{H}_2\text{O}(l) + \frac{1}{2} \text{O}_2(g)$ Is Second order reaction. (True/False)
5. Give the rate equation for $A+A \rightarrow P$ type Second order reaction?
6. Give the Equation for quantum efficiency?
7. What is Half life time for Second order reaction?
8. Give the definition of Homogeneous Catalyst?
9. Give the Integrated rate equation for Zero order reaction?
10. What is Surface tension?
11. Give the definition for viscosity?

Que-2. Answer any five questions. Each question carries 4marks

[20]

1. Explain the third law of thermodynamics.
2. Explain the Absolute temperature scale.
3. Explain Surface tension, Viscosity and Refractive index for liquid state?
4. Describe the rate constant for First order reaction.
5. Explain Debye Huckel theory?
6. Explain the space lattice and Unit cell.

Que-3. Answer any three questions. Each question carries 7 marks [21]

1. Explain the Determination of Absolute Entropy for solid, Liquid and Gas?
2. Explain the Homogeneous and Heterogeneous catalyst.
3. Explain the Lambert and Beer law for photo chemistry.
4. Explain the Langmuir theory of Adsorption.
5. Explain the types of solid.