

VSPM Academy of Higher Education
Arvinbabu Deshmukh Mahavidyalaya, Bharsingi
Important Questions for UNIT TEST Examination
Subject- Chemistry (P-II) (Physical Chemistry)
Class- B.Sc-I (Sem-II)

Q.1. Long answers.

- A. What are postulates of transition state theory? Derive Expression for rate constant based on equilibrium constant. 5
- B. Define: (i) Mass defect and (ii) Binding Energy.
Calculate the binding energy per nucleon of $^{16}_8\text{O}$ whose mass defect is 0.1370148 amu. 5
- C. What is First order reaction? Derive expression of rate constant for First order reaction. 5
- D. Discuss assumptions and limitations of collision theory of bimolecular reactions. 5

Q.2. Short answers

- A. Describe the Ostwald's Isolation Method for the determination of order of reactions. 2.5
- B. Explain the effect of : (i) Temperature and (ii) Concentration on the rate of reactions. 2.5
- C. Discuss Lindemann theory as applied to the unimolecular reactions. 2.5
- D. Define activation energy. How is it determined by graphical method. 2.5
- E. Define: (i) Nuclear Fusion and (ii) Nuclear Fission and give one example. 2.5
- F. Discuss Distinguish between Chemical Reaction and Nuclear Reaction. 2.5