

Khyber Pakhtunkhwa Public Service Commission
Competitive Examination for the Post of Provincial Management Service
(BPS-17)

CHEMISTRY PAPER-I

- Q. 1 What is your opinion how Schrodinger wave equation can helps in determining the position of an electron in an atom? Derive Schrodinger equation and also comment on the significance of Ψ (psi) and Ψ^2 ? (20)
- Q. 2 (a) What is equivalent and molar conductance? Describe how degree of dissociation of a weak electrolyte can be determined. (10)
- (b) Explain with suitable examples that how a Galvanic cell is different from electrolytic? (05)
- (c) How you will measure EMF of a Cell? Using Nernst equation (05)
- Q.3 What are the characteristics of 2nd order reaction? and how they are different from 1st order reaction. Derive expression for a 2nd order reaction using similar concentration of reactants. (20)
- Q.4 Describe the extraction of pure Aluminum from bauxite ore. Please give chemical reactions, flow diagram and other related details. (20)
- Q.5 How Cement is prepared at industrial scale? Describe separately Dry and Wet process. (20)
- Q. 6 Describe Valance Bond theory and explain the structure of Acetylene on its basis. (10)
- What is inductive effect and how it effects the strength of an acid.? (10)
- Q.7 (a) Describe chemical equilibrium and how it is influenced? (10)
- (b) Describe Gibbs phase rules and its applications to two component system. (10)
- Q.8 Write notes on any TWO of the following (20)
- (a) Debye – Huckel theory
- (b) Nitrogen fixation
- (c) Ozone layer depletion
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