

**KHYBER PAKHTUNKHWA, PUBLIC SERVICE COMMISSION**

**COMPETITIVE EXAMINATION FOR THE POSTS OF PROVINCIAL  
MANAGEMENT SERVICES (BPS-17).**

2016

**CHEMISTRY PAPER-II**

**TIME ALLOWED: 03 HOURS**

**MAX:MARKS: 100**

**Note:** Attempt any Five questions. All questions carry equal marks.

- Q1. A) Describe the important features of **Valance Bond Theory** and **Molecular Orbital theory**? 12
- B) Why **Bond angles** reduce by increasing lone pairs with examples? 08
- Q.2 A) According to **reaction kinetics** which type of reaction occur in our body? Explain 2<sup>nd</sup> order of reaction with the help of equation? 14
- B) Describe the **Rate Law** with equation? 06
- Q.3 A) Discuss **Homogenous and heterogeneous Catalysis** with daily life example? 10
- B) Explain optical and geometric isomerism with examples? 10
- Q.4 A) Write Synthetic applications of **Halogen** Compounds? 08
- B) Describe the bonding and reactivity of **Carbonyl** compounds? 12
- Q.5 A) Drive the mechanism of following **Electrophilic Substitution** Reactions: Nitration, Formylation and Sulphonation? 12
- B) What are dyes and applications of dyes in industry? 08
- Q.6 Explain bonding in **Benzene** and problems with the Kekulé structure? 20
- Q.7 A) What are the role of **Carbohydrates** and fats in body? 08
- B) What is **Fermentation**? How Fermentation processes uses for the preparation of Petro-chemical industry? 12

Q.8 (A) What is Aromaticity? Describe the criteria and evidences for Aromaticity. 10

B, What is the role of vitamins in the body. Write a note on vit. B and C. 10