B.Sc. B.Ed SEM-II Examination: 2020

Course-GE 1.2 / GE 2.2

Subject: Chemistry

Time: 2 Hours **F.M. 50**

Answer any ***ten*** questions **(5 × 10 = 50)**

1. State the Huckel rule for aromaticity. Draw the molecular orbital structure of benzene. (2 ½ + 2 ½)
2. Explain Friedel-Craft alkylation reaction with example. 5
3. How do you prepare phenol from aniline? Explain the reaction with mechanism. (2 + 3)
4. Explain why: (i) Phenol is more acidic than cyclohexanol, (ii)1,3,5 trinitro phenol is less acidic than 1,3 dinitro phenol. (2 ½ + 2 ½)
5. Write shot note on Reimer-Tiemann reaction. 5
6. Draw the structure of the following compounds.
   (i) 4-chloropentane-2-one
   (ii) 3-oxopentanal (2 ½ + 2 ½)
7. Write short notes on H-bonding of alcohol. 5
8. State the merits and demerits of Vander wall's equation for real gases. (2 ½ + 2 ½)
9. What is critical temperature? Mention the factors upon which the critical temperature depends. (2 ½ + 2 ½)
10. (a) Calculate the P^H of 0.02 M sodium hydroxide solution.
    (b) Calculate the P^H of 0.01M HCl solution. (2 ½ + 2 ½)
11. Write short note on solubility product. 5
12. What is acid-base indicator? Give two examples. (3 + 2)