

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

Course-CC02

Subject: Chemistry

Time: 2 Hours

F.M. 50

Answer any *ten* questions

(5 × 10 = 50)

- (i) Explain why, benzene does not readily undergo addition reaction.
(ii) What happens, when benzene is treated with propanoyl chloride in the presence of aluminium chloride? (3+2)
- Why benzene reacts with bromine more readily than cyclohexane but less readily than cyclohexene. 5
- Why phenol is more reactive to electrophile than benzene. Write the equation for the reaction of phenol with nitric acid. (3+2)
- Explain the Claisen rearrangement with example. 5
- Write short note on Reimer-Tiemann reaction. 5
- Which of the following compound has highest melting point and why?
Chlorobenzene, *o*-dichlorobenzene, *m*-dichlorobenzene, *p*-dichlorobenzene 5
- Explain the substitution reaction of chlorobenzene with example. 5
- Write Vander Wall's equation of real gases. What are the units of 'a' and 'b' in the Vander Wall's equation? (3+2)
- Write the basic postulates of Kinetic Molecular theory of gases. 5
- Consider Haber process for manufacturing ammonia $N_2(g) + 3H_2 \rightleftharpoons 2NH_3(g)$,
 $\Delta = -92 K / m$
(a) What happens, if pressure is increased?
(b) How do you get maximum yield by altering temperature? (2 ½ + 2 ½)
- Write short note on Buffer solution. 5
- What do you mean by solubility product? How do you calculate the solubility product of AgCl? (2+3)