

**FIFTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY) EXAMINATION
NOVEMBER 2017**

(UG—CCSS)

CH 5B 10—ORGANIC CHEMISTRY—II

Time : Three Hours

Maximum : 30 Weightage

I. Multiple choice and fill in the blanks type questions. Answer all *twelve* questions :

- 1 Synthesis of vitamin D in human body is a _____.
(a) Reduction. (b) Oxidation.
(c) Pericyclic reaction. (d) None of the above.
- 2 Diels Alder reaction is _____.
(a) [2 + 2]cycloaddition. (b) [4 + 2]cycloaddition.
(c) Sigmatropic rearrangement. (d) None of the above.
- 3 Among the halides, the ease of formation of Grignard reagent is _____.
(a) $\text{Cl} > \text{Br} > \text{I}$. (b) $\text{I} > \text{Br} > \text{Cl}$.
(c) $\text{Br} > \text{I} = \text{Cl}$. (d) $\text{I} > \text{Br} = \text{Cl}$.
- 4 Alkoxy mercuriation-demercuration of alkenes give _____.
(a) Ethers. (b) Alcohols.
(c) Polyenes. (d) Alkynes.
- 5 When calcium acetate is strongly heated _____ is formed.
(a) Methane. (b) Ethane.
(c) Propanone. (d) Propanal.
- 6 Which one of the following gives Cannizaro's reaction ?
(a) HCHO. (b) $\text{C}_6\text{H}_5\text{-CHO}$.
(c) $(\text{CH}_3)_3\text{C-CHO}$. (d) All of the above.
- 7 Acid chlorides on Rosenmund reduction gives _____.
- 8 Gilman reagent is _____.

- 9 Phenol has a high boiling point due to _____.
- 10 2-Chlorobutane when treated with alcoholic KOH gives _____.
- 11 Aldehydes and ketones can be differentiated using _____ reagent
- 12 Acrolein is _____.

(12 × ¼ = 3 weightage)

II. Short answer type questions. Answer all *nine* questions :

- 13 Give an example of a sigmatropic rearrangement.
- 14 Which is more acidic benzoic acid or *o*-toluic acid ? Why ?
- 15 How is caprolactum synthesised ?
- 16 What is a benzyne intermediate ?
- 17 What happens when cinnamaldehyde is treated with NaBH₄ ?
- 18 How is phenol synthesised from cumene ?
- 19 What is aspirin ? How is it prepared ?
- 20 What happens when ethylene oxide is treated with CH₃MgBr ?
- 21 Vinyl bromide shows slow reaction with ammonia. Why ?

(9 × 1 = 9 weightage)

III. Short essays or paragraph questions. Answer any *five* questions :

- 22 Discuss the mechanism and stereochemistry of S_N2 reaction with an example.
- 23 Explain any two synthetic applications of organo zinc reagent.
- 24 Explain the mechanism of Reimer-Tiemann reaction.
- 25 What is HVZ reaction ? Outline its mechanism.
- 26 Discuss the pericyclic mechanism of Claisen rearrangement.
- 27 Discuss briefly Zeisel's method of estimation of alkoxy groups.
- 28 Explain Saytzeff rule and illustrate the application.

(5 × 2 = 10 weightage)

IV. Essay questions. Answer any two questions :

- 29 (a) Analyse Diels-Alder reaction using FMO method.
(b) Explain briefly the mechanisms of substitution reactions.
- 30 Discuss the mechanisms of the following reactions and explain their synthetic importance.
(a) Perkins reaction.
(b) nitration of phenol.
- 31 Give a brief account of the following :
(a) Synthetic applications of organo lithium compounds.
(b) Keto-enol tautomerism.
(c) Stobbe condensation.
(d) Kolbe's reaction.

(2 × 4 = 8 weightage)