D 70957 (Pages 3) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(UG–CCSS)

Core Course

Chemistry

CH 5B 10—ORGANIC CHEMISTRY—II

Time : Three Hours Maximum : 30 Weightage

Write equations wherever necessary.

I. Multiple choice and fill in the blank type questions. Answer all *twelve* questions. Each question carries a weightage ¼.

1 Formalin contains :

(a) HCHO. (b) CH_3CHO.

(c) C_6H_5CHO. (d) HCOOH.

2 Ethylbromoacetate reacts with acetonitrile in the presence of Zn to form acetoacetic ester. This reaction is known as :

(a) Wittig reaction. (b) Wurtz reaction.

(c) Reformatsky reaction. (d) Gilman synthesis.

3 Zeisel's method is used to estimate :

(a) Alcoholic group. (b) Amino group.

(c) Alkoxy group. (d) Halo group.

4 Arndt-Eisert synthesis is used to convert carboxylic acid into its :

(a) Lower homologue. (b) Higher acythalide.

(c) Higher homologue. (d) None of these.

5 Condensation of benzaldehyde with acetaldehyde in the presence of alkali gives ————.

(a) Schif's base. (b) Cinnamaldehyde.

(c) Cinnamic acid. (d) Benzoin.

6 Alkyl Lithium in excess reacts with CO_2 followed by hydrolysis to give :

(a) Carboxylic acid. (b) Ketone.

(c) β-Ketoacid. (d) None of these.

7 Which one of the following acids on hydrolysis gives aniline ?

(a) Anthranilic acid. (b) Adipic acid.

(c) Phthalic acid. (d) Oxalic acid.

8 In Friedel-Craft's reaction, the reagent used is _____.

(a) Zn/HCl. (b) Anhydrous $AlCl_3$.

(c) Ni. (d) Na.

9 Alcohols when treated with conc. H_2SO_4 at 160°C dehydrate to give :

(a) Alkenes. (b) Alkynes.

(c) Alkanes. (d) None of these.

10 Phenol is a stronger acid than :

(a) Carbonic acid. (b) o-Cresol.

(c) o-Nitrophenol. (d) p- Nitrophenol.

11 The compound formed when iodobenzene is heated with copper powder in a sealed tube is :

(a) Biphenyl. (b) Triphenyl.

(c) Cyclohexane. (d) None of these.

12 Grignard reagent reacts with ketone followed by hydrolysis gives :

(a) Primary alcohol. (b) Secondary alcohol.

(c) Tertiary alcohol. (d) None of these.

(12 × ¼ = 3 weightage)

II. Short Answer Type Questions. Answer all *nine* questions. Each question carries a weightage 1 :

13 How is aspirin prepared ?

14 What do you understand by primary, secondary and tertiary alcohol ?

15 What is vanillin chemically? How is it prepared from oil of cloves ?

16 Explain Diels-Alder reaction.

17 What is crown ether? Give its uses.

18 Acetic acid is less acidic than formic acid. Why ?

19 What is pericyclic reaction? Give the types of pericyclic reactions.

20 What is Perkin's reaction ?

21 Explain Reimer-Tiemann reaction.

(9 × 1 = 9 weightage)

III. Short Essays or Paragraph Questions. Answer any *five* questions. Each question carries a weightage 2 :

22 Discuss Cope rearrangement.

23 Give any two reactions to distinguish between benzaldehyde and benzophenone.

24 Discuss the mechanism of acid and base catalysed cleavage of epoxides.

25 Give an account of HVZ reaction.

26 Discuss the mechanism of Reformatsky reaction.

27 Explain the mechanism of SN^1 and SN^2 reactions of alkyl halides.

(5 × 2 = 10 weightage)

IV. Essay Questions. Answer any *two* questions. Each question carries a weightage 4 :

28 (a) Give the structure of citric acid and its uses.

(b) Explain : (i) Kolbes reaction ; (ii) Hofmann bromamide reaction.

29 (a) Explain Frontier orbital theory for cycloaddition.

(b) Discuss Claisen rearrangement.

30 Discuss : (i) Haloform reaction ; and (ii) Stobbe condensation.

(2 × 4 = 8 weightage)