

**B. Sc DEGREE END SEMESTER EXAMINATION MARCH 2016****SEMESTER - 4 : CHEMISTRY (CORE COURSE)**

COURSE: U4CRCHE4 - BASIC ORGANIC CHEMISTRY I

Time :Three Hours

Max. Marks: 60

**Section A**Answer **all** the questions. **1** mark each

1. Grignard reagent reacts with water to form .....
2. A reagent used for *cis*-hydroxylation of alkene is .....
3. Hinsberg's reagent is .....
4. Which is more acidic chloroacetic or fluoroacetic acid?
5. Ozonolysis locates the position of ..... bond in organic molecules.
6. What is vinegar?
7. What is the product obtained when toluene is treated with chromyl chloride in  $\text{CCl}_4$ ?
8. Hunsdiecker reaction is used for the preparation of ..... (1 x 8 = 8)

**Section B**Answer **any six** questions. **2** mark each

9. How will you distinguish between formic and acetic acid?
10. What happens when phenol is treated with nitrating mixture?
11. What happens when acetamide is heated with  $\text{P}_2\text{O}_5$ ?
12. What is the effect of  $\text{NaOH}$  on acetaldehyde?
13. What are epoxides? How is it prepared?
14. How will you accomplish the following conversion:  $\text{CH}_3\text{CH}_2\text{Br} \rightarrow \text{CH}_3\text{CH}_3$ .
15. Give the mechanism of Cannizzarro's reaction.
16. What do you understand by the term 'Zwitter ion'

(2 x 6 = 12)

### Section C

Answer **any Four** questions. **5** mark each

17. Cyanide ion is considered as a unique catalyst for effecting Benzoin condensation. Based on the mechanism of benzoin condensation, substantiate this hypothesis.
18. Discuss the mechanism of Pinacol-Pinacolone rearrangement?
19. Describe Zeisel's method of estimation of alkoxy groups.
20. Give the preparation and properties of adipic acid.
21. How will you prepare malonic ester? Mention any three synthetic application.
22. How will you synthesize N-bromosuccinimide from succinic acid?

(5 X 4 = 20)

### Section D

Answer **any Two** questions. **10** mark each

23. Discuss the following reactions and mechanisms:
  - i) Baeyer-Villiger oxidation
  - ii) MPV reduction.
  - iii) Wolff-Kishner reduction.
  - iv) Fries rearrangement.
24.
  - i) What is Lucas reagent? How is it used to distinguish primary, secondary and tertiary alcohols?
  - ii) Discuss the acid catalysed mechanism for the dehydration of alcohols?
  - iii) How does ethylene glycol react with periodic acid?
25.
  - i) How will you convert anthranilic acid to salicylic acid?
  - ii) How is citric acid synthesized from glycerol?
  - iii) Give an account of Williamson's synthesis of ether.
26.
  - i) What happens when urea is: a) heated alone; b) treated with  $\text{HNO}_2$ ; c) treated with hydrazine.
  - ii) What is Hoffmann's degradation of amides? Discuss its mechanism.
  - iii) How will you distinguish between phenol and ethyl alcohol?

(10 x 2 = 20)

\*\*\*\*\*