

E 5307

(Pages : 3)

Reg. No.....

Name.....

**B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2013**

**Fourth Semester**

**Core Course—BASIC ORGANIC CHEMISTRY—I**

(Common for B.Sc. Chemistry Model I and Model II B.Sc. Petrochemicals and  
B.Sc. Chemistry Environment and Management)

Time : Three Hours

Maximum Weight : 25

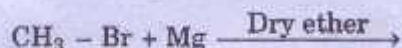
*Write equations wherever necessary.*

**Section A**

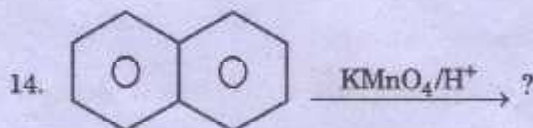
*Answer all questions.*

*Each bunch of four questions carries a weight of 1.*

- I. 1. Structure of Catechol is ———.
2. Write the functional group of ether.
3. Give one example of aromatic aldehyde.
4. Name the product when hydrazine reacted with aldehyde.
- II. 5. Give the main product of following reaction :—



6. ——— is the product when formaldehyde reacted with Grignard reagent.
7. Biuret is the product, when ——— heated.
8. Urea + Hydrazine  $\longrightarrow$  ?
- III. 9. Draw the resonance structure of carboxylate ion.
10. Which is more acidic – F –  $\text{CH}_2\text{COOH}$  and Cl –  $\text{CH}_2\text{COOH}$ .
11. Which is more acidic – Formic acid and Acetic acid.
12. What is the major product the reaction  $\text{R-COOH} + \text{SOCl}_2$  ?
- IV. 13. Draw the structure of naphthaquinone.



Turn over

15. Write the enol form of  $\text{CH}_3\text{COCH}_2\text{COOC}_2\text{H}_5$ .

16.  $\text{CH}_2-(\text{COOH})_2 + 2\text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{HCl}} ?$

(4 × 1 = 4)

### Section B

Answer any **five** questions.

Each question carries a weight of 1.

17. What is HVZ reaction? Give equation.
18. Which is more acidic and why – Nitrobenzene and benzene?
19. Which is more reactive towards nucleophile and why formaldehyde and acetaldehyde?
20. Give one method of preparation and reactions of urea.
21. What is active methylene compound? Give two examples.
22. How is Phthalaldehyde obtained from naphthalene? Write equation.
23. Which is more acidic - Phenol or Alcohol. Why?
24. What happens when diethylether reacted with  $\text{HIO}_4$ . Write equation.

(5 × 1 = 5)

### Section C

Answer any **four** questions.

Each question carries a weight of 2.



26. Convert Acetic acid to :

- |                      |                          |
|----------------------|--------------------------|
| (i) Ethyl ethanoate. | (ii) Ethanoic anhydride. |
| (iii) Ethanamide.    | (iv) Ethanoyl chloride.  |

27. What is Clemmenson and Wolff-Kishner reagent? Give their one application is aldehyde and Ketone.



28. Give the products, when following compounds react with  $\text{CH}_3 - \text{Mg.Br}$  :

- |                     |                                  |
|---------------------|----------------------------------|
| (a) $\text{CO}_2$ . | (b) $(\text{CH}_3)_2\text{CO}$ . |
| (c) Ethyl formate.  | (d) Methylcyanide.               |

Write equation also.

29. Give four synthetical use of malonic ester.

30. What is Lucas test ? Explain.

(4 × 2 = 8)

#### Section D

*Answer any two questions.*

*Each question carries a weight of 4.*

31. (a) Write the mechanism of Fries rearrangement and Pinacol-Pinacolone rearrangement.

(b) Give one example for the preparation and reactions of epoxides.

32. (a) Write the mechanism of following conversion :—

(i) Acetaldehyde to crotonaldehyde ;

(ii) Benzaldehyde to cinnamic acid.

(b) Explain Mannich and Wittig reaction.

33. Give two method of preparation and properties with equation of following compounds :—

- |                       |                   |
|-----------------------|-------------------|
| (a) Anthranilic acid. | (b) Maleic acid.  |
| (c) Oxalic acid.      | (d) Acrylic acid. |

(2 × 4 = 8)