

16U512

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Name:

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS-UG)

CC15U CHE5 B07 - ORGANIC CHEMISTRY - II

(Chemistry - Core Course)

(2015-Admission onwards)

Time: Three Hours

Maximum: 80 Marks

SECTION A

Answer *all* questions. Each question carries 1 mark.

1. Ethanol on oxidation with PCC yields
2. On heating, phthalic acid gives
3. Aldol condensation product of is but-2-enol.
4. The structural formula of 4-methoxy butanoic acid is
5. Primary alkyl halides generally undergo elimination by mechanism.
6. The reduction of nitrobenzene with zinc dust and ammonium chloride gives
7. Among pyrrole, furan, thiophene, the sulphur containing heterocyclic compound is
8. The reaction of alkenes with peracids is known as
9. Among the three isomeric nitrophenols, the isomer has intermolecular hydrogen bonding.
10. Gilman's reagent is

(10 x 1 = 10 Marks)

SECTION B

Answer any *ten* questions. Each question carries 2 marks.

11. What are crown ethers? Give any one application.
12. Illustrate Williamson's synthesis with example.
13. What is the order of S_N^2 reactivity among 1^0 , 2^0 and 3^0 alkyl halides.
14. How can methyl magnesium iodide be converted to acetone?
15. What is Reimer-Tiemann reaction? Give one example.
16. What is Alizarin? How is it prepared?
17. What is Clemmensen's reduction? Give one example.
18. What is HVZ reaction? Explain with a suitable example.
19. Give one example for Kolbe's electrolytic reaction.
20. Explain Hofmann elimination reaction with a suitable example.

21. How can you convert ethyl acetoacetate to glutaric acid?

22. How can you convert furan to phthalic anhydride?

(10 x 2 = 20 Marks)

SECTION C

Answer any *five* questions. Each question carries 6 marks.

23. Discuss the reactivity and orientation of pyridine during electrophilic substitution reactions.

24. Vinyl halides such as vinyl bromide $\text{CH}_2=\text{CH}-\text{Br}$, undergo neither SN^1 nor SN^2 reactions. What factors account for this lack of reactivity?

25. Explain Luca's test for the distinction of 1° , 2° and 3° alcohols.

26. Write the mechanism of Pinacol-Pinacolone rearrangement taking a suitable example.

27. What is Beckmann rearrangement? Explain with an example.

28. How is phenolphthalein prepared? Mention its two important uses.

29. Explain Ziesel's method of estimation of methoxy groups.

30. How is Benzene sulphonic acid prepared? How can it be converted to phenol?

(5 x 6 = 30 Marks)

SECTION D

Answer any *two* questions. Each question carries 10 marks.

31. Discuss the addition-elimination and elimination addition mechanism of nucleophilic aromatic substitution? Give two supportive evidences for each mechanism?

32. (1) Discuss the mechanism of (a) Cannizzaro reaction, (b) Aldol condensation?

(2) Illustrate how 1° , 2° and 3° alcohols are prepared from Grignard reagents?

33. (1) Compare the acidity of alcohols and phenols?

(2) Discuss the effect of substituents on the acidity of phenol?

34. How is benzene diazonium chloride prepared? How is it converted to

(a) Benzene, (b) Phenol, (c) Chlorobenzene,

(d) Cyano benzene, (e) Nitrobenzene

(2 x 10 = 20 Mark)
