19U513 (Pages: 2) Name: .....

Reg.No: .....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS - UG)

CC19U CHE5 B07 - ORGANIC CHEMISTRY - II

(Chemistry - Core Course)

(2019 Admission - Regular)

Time : 2.00 Hours Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer ***all*** questions. Each question carries 2 marks.

1. Draw all the possible constitutional isomers of alcohols possible for the molecular formula C_3H_8O and give their IUPAC names.
2. What is PCC and what is its special use ?
3. How is phenolphthalein prepared?
4. Explain how crown ether helps $KMnO_4$ to dissolve in benzene.
5. Write the structural formulae of (1) pent-1-ene-3-one and (11) 3-bromobut-2-enal
6. Give the equation for the reaction of propanone with sodium hydrogen sulphite and name the type of reactions illustrated by this example.
7. How can you convert 1-bromopropane to butanoic acid? Explain with suitable equations.
8. Give the structural formula and IUPAC name of citric acid.
9. How can benzenesulphonic acid be converted to (i) cyanobenzene (ii) aniline. Give equations.
10. Mention a method for the conversion of ethyl iodide to ethylamine.
11. How is benzenediazonium chloride prepared?
12. What happens when furan is treated with SO_3 in pyridine?

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer ***all*** questions. Each question carries 5 marks.

13. Explain the order of acidity of phenol, p-nitrophenol and p-methoxyphenol.

14. Explain with equations what happens when 2,2-dimethyloxirane undergoes ring cleavage with (i) HCl and (ii) sodium methoxide in methanol.

15. What are Grignard reagents? Explain their general method of preparation.

16. Carry out the following conversions: (a) Benzaldehyde to acetophenone;
(b) Acetophenone to ethylbenzene.

17. Explain the esterification reaction of citric acid with ethanol. Explain with equations the action of (i) acetyl chloride, and (ii) conc. HI on citric acid.

18. Write structural formulae for these amines. (a) 2-Methylpropan-1-amine (b) Cyclohexanamine (c) Butan-2-amine.

19. Give an example for the synthesis of a dicarboxylic acid from acetoacetic ester.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any ***one*** question. The question carries 10 marks.

20. (a) Explain with equations how the following conversions can be effected: (i) pentanal to pentanoic acid; (ii) ethanal to but-2-enal; (iii) benzaldehyde to cinnamic acid; (iv) benzaldehyde to benzoin
(b) Give two chemical tests to distinguish between benzaldehyde and acetophenone

21. How is benzenediazonium chloride prepared ? How is it converted to (a) benzene, (b) phenol, (c) iodobenzene, (d) chlorobenzene, (e) cyanobenzene and (f) nitrobenzene?

(1 × 10 = 10 Marks)

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