

Reg. No.....

Name.....

**B. Sc DEGREE END SEMESTER EXAMINATION OCTOBER 2017****SEMESTER 3: CHEMISTRY (CORE COURSE)****COURSE: 15U3CRCHE03, ORGANIC CHEMISTRY-1***(For Regular - 2016 Admission and Supplementary / Improvement 2015 Admission)*

Time: Three Hours

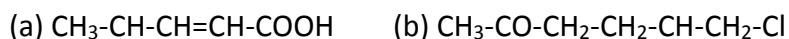
Max Marks: 60

**SECTION A*****(Answer all the questions. 1 mark each)***

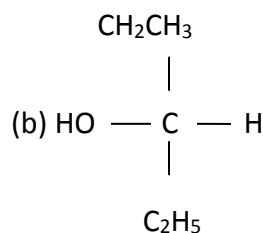
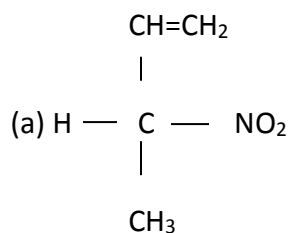
1. Give two examples for non benzenoid aromatics
2. What is meant by hyperconjugation
3. Represent the structure of threo and erythro tartaric acid
4. What is a nitrenes
5. The C-C bond length in benzene is 1.40Å. Explain
6. Give two examples for neutral nucleophiles
7. Define specific rotation
8. Arrange the following groups in the increasing order of their priority as per CIP system  
(a) CHO                      (b) CN                      (c) CH<sub>2</sub>-OH                      (d) COOH

**(1 × 8 = 8)****SECTION B*****(Answer any Six questions. 2 marks each)***

9. Write the IUPAC name for



10. Distinguish between inductive and electromeric effects
11. State Huckels rule and explain the aromaticity of cyclopentadienyl anion
12. Assign R and S configuration for the following compounds



13. What are benzyne. How are they generated
14. Explain the terms internal and external compensation
15. Phenol is acidic. Explain
16. What are carbocations and explain the structure of carbocations

**(2 × 6 = 12)**

**SECTION C*****(Answer any Four questions. 5 marks each)***

17. Discuss the mechanism and the factors influencing  $S_N2$  reactions.
18. Explain Markowinikov and anti Markowinikov addition with suitable example
19. Write the structural formula for
  - (a) 1,3-Cyclohexadiene
  - (b) 6-Methyloctan-3-ol
  - (c) 2- Ethylpent-2-ene
  - (d) 2,3-dichloro-1-phenylpentane
  - (e) 4-Nitro pent-1-yne
20. How can we distinguish cis and trans isomers from their physical and chemical properties
21. Explain the terms activating and deactivating groups with example
22. Represent the different conformers of cyclohexane and compare the stability of boat and chair confirmation of cyclohexane

(5 × 4 = 20)

**SECTION D*****(Answer any 2 questions. 10 marks each)***

23. Discuss in detail different type of polymerization reaction with their mechanisms
24. (a) Discuss the optical isomerism in allenes and biphenyls
  - (b) Explain the term partial and absolute asymmetric synthesis with suitable example
25. (a) What are sigmatropic rearrangements explain with an example
  - (b) Explain the resonance and molecular orbital structure of naphthalene
26. (a) What is meant by aromatic electrophilic substitution?
  - (c) Explain the mechanism for (a) nitration (b) Friedel crafts alkylation and (c) chlorination of benzene

(1 + 9)

(10 × 2 = 20)

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