

B. Sc. DEGREE END SEMESTER EXAMINATION - OCTOBER 2018**SEMESTER 3 : B. Sc. CHEMISTRY (CORE COURSE)****COURSE: 15U3CRCHE3, ORGANIC CHEMISTRY - I**

(For Regular - 2017 Admission and Supplementary / Improvement 2016, 2015 Admissions)

Time: Three Hours

Max Marks: 60

SECTION A

(Answer **all** the questions. Each question carries 1 mark)

1. Give the prefix name of the following: a) C_2H_5O- b) $-CN$
2. What do you understand by enantiomers?
3. What happens when chlorobenzene is treated with sodalime in liq. NH_3 ?
4. Define heat of hydrogenation.
5. What is homolytic & heterolytic fission?
6. Why is acetic acid a weaker acid than formic acid?
7. What are pericyclic reactions?
8. Explain why nitration of benzene takes place more readily than nitration of nitrobenzene.

(1 x 8 = 8)

SECTION B

(Answer any **six** questions. Each question carries 2 marks)

9. Define aromaticity. Discuss whether cyclooctatetraene show aromatic character.
10. Explain by an example the phenomenon of hyperconjugation.
11. Differentiate between homopolymers and copolymers.
12. Give the IUPAC name of the following:
a) $H_3C-CH=CH-CH(NH_2)-CH_2-CHO$ b) $CH_3-CH(CH_3)-CH(Cl)-COOH$
13. Give the structural formulae for the following:
a) But-2-en-1-oic acid b) 3-Hydroxy-4-methylpent-4-en-1-nitrile
14. Explain Diel's Alder reaction.
15. Explain suprafacial & antrafacial processes.
16. Discuss the orbital structure of naphthalene.

(2 x 6 = 12)

SECTION C

(Answer any **four** questions. Each question carries 5 marks)

17. What is meant by racemic mixture? What is resolution? Discuss any two methods for resolving a racemic mixture.
18. Write the mechanism for the nitration of benzene.

19. Explain why naphthalene is more reactive than benzene.
20. State Markownikoff's rule. Illustrate giving an example.
21. Differentiate between electromeric effect & inductive effect.
22. Write an account on Hofmann's elimination. (5 x 4 = 20)

SECTION D

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

23. a) Discuss the mechanism of anti-Markownikoff addition of HBr to alkenes.
b) Give the mechanisms of E1 and E2 reactions.
24. What are carbocations & carbanions? How are they formed? Discuss their geometry and relative stabilities.
25. Discuss the conformations of the following organic compounds:
a) n-Butane b) Cyclohexane
26. Discuss the mechanism of the following nucleophilic aromatic substitution reactions:
a) Bimolecular displacement reaction b) Elimination-addition reaction

(10 x 2 = 20)
