

Exam. Code : 103203

Subject Code : 8031

B.A./B.Sc. 3rd Semester (Old Syll 2017)

CHEMISTRY (Organic Chemistry-II)

Time Allowed—3 Hours]

[Maximum Marks—35

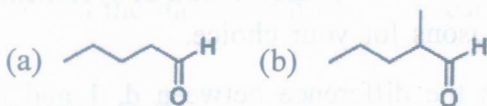
PART-A

Note :— Attempt **all** questions in this Section. Each question carries 1 mark.

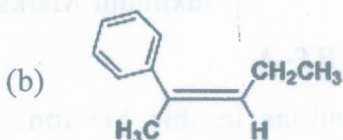
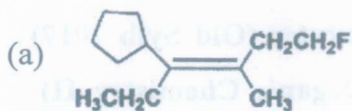
1. Phenols are acidic in nature. Give a reason other than resonance.
2. Chlorination of 2-butanone yield two products. Discuss.
3. How do erythro-and dl-pair differ ?
4. Suggest a mechanism for following reaction :



5. Write the structure and reaction conditions for addition product of 2-methylbutanal and following :



6. Determine the configuration of the following alkenes :



7. What is the difference between configuration and conformational isomers ?
8. Is the structure shown Chiral ? Is it asymmetric ?



PART-B

Note :— Attempt **two** questions from each Section. Each question carries 4.5 marks.

SECTION-I

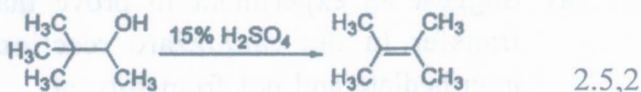
9. (a) Draw a molecule that contain C_3 axis and a single mirror plane.
- (b) Draw more stable conformation of cyclohexanol. Give reasons for your choice.
- (c) What is the difference between d, l and D, L isomers ?

1,2,5,1

10. (a) Discuss different properties of enantiomers. Why resolution of enantiomers is important ? Give one method of resolution of isomers. 3,1.5
- (b) What does Fischer and flying wedge formulae depict ? 3,1.5
11. (a) Draw Newman projection formula for most stable isomer of methylcyclohexane.
- (b) What are meso compounds ? Give examples.
- (c) Out of axial and equatorial bonds which one is longer and why ? 1,2,1.5

SECTION-II

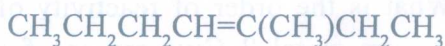
12. (a) What is the order of reactivity of alcohol with sodium metal ? Give reasons for the assigned order.
- (b) Discuss mechanism of following conversion.



13. (a) With mechanism, discuss the synthesis of phenol using cumene hydroperoxide.
- (b) Discuss the mechanism of Fries rearrangement. 2,2.5
14. Discuss the mechanism of pinacol-pinacolone rearrangement. How will you prove the intermediacy of carbocation in this reaction ? 4.5

SECTION-III

15. (a) Semicarbazide (1 mol) is added to a mixture of cyclohexanone (1 mol) and benzaldehyde (1 mol). If the product is isolated immediately, it contains almost entirely semicarbazone of cyclohexanone; if product is isolated after several hours, it consists almost entirely of the semicarbazone of benzaldehyde. Give reasons.
- (b) How will you convert formaldehyde to acetone by application of 1,3 dithiane ? 3,1.5
16. (a) What combination of reactant will give following compound ? Name the reaction. Give mechanism of reaction.



- (b) Predict the product of vigorous oxidation of 3-hexanone and cyclohexanone. 3,1.5
17. (a) Suggest an experiment to prove that hydride transfer in the cannizzaro reaction is from intermediate and not from solvent.
- (b) Explain with suitable examples mechanism of Knoevenagel condensation. 2,2.5