

FACULTY OF SCIENCE
B.Sc. (CBCS) III – Semester Examination, December 2017
Subject : CHEMISTRY

Paper – III

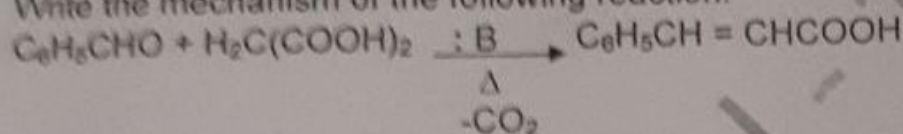
Max. Marks : 80

Time : 3 hours

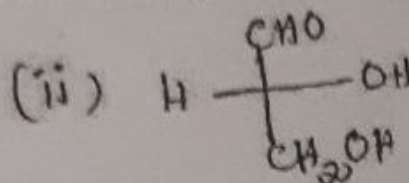
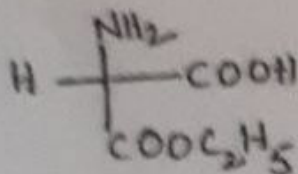
Part – A (5 X 4 = 20 Marks)
(Short Answer Type)

Answer any Five of the following questions.

- 1 Write the electronic configuration of Eu^{2+} , Yb^{2+} , Ce^{4+} and Tb^{4+} ions.
- 2 What is centre of symmetry? Explain with two examples.
- 3 Give the reactions for the preparation of 1° , 2° and 3° alcohols using Grignard reagent.
- 4 Write the mechanism of the following reaction.



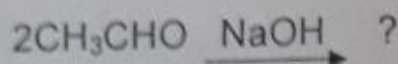
- 5 Discuss the principle involved in cleansing action of soap.
- 6 State phase rule and explain the terms in it.
- 7 Write a note on structural features of grapheme.
- 8 Give the R and S configuration of the following structures.



Part – B (4 X 15 = 60 Marks)
(Essay Answer Type)

Answer ALL questions from the following:

- 9 a) i) Illustrate the rotation-reflection operation in trans-1,2-dichloroethane and methane.
ii) Write about the ion-exchange method for the separation of lanthanides.
OR
- b) i) Explain the differences between lanthanides and actinides.
ii) Discuss the reactions that take place in liquid ammonia.
- 10 a) i) Discuss the action of conc. H_2SO_4 and action of HI with ethers.
ii) Give the product and mechanism of the following reaction.



OR

- b) Write note on
 - i) Schotten – Boumann reaction
 - ii) Meerwein Ponnoff verly reduction
 - iii) Gattermann-Koch reaction

Code No. 7063 / E

- 2 -

- 11 a) Explain phase diagram of Mg-Zn system.
OR
b) Discuss the Langmuir theory of adsorption.
- 12 a) i) Discuss the methods of production of carbon nanotubes.
ii) Explain the methods of resolution of racemic mixtures.
OR
b) i) Give the conformational analysis of 1,2-dichloroethane.
ii) Write the structural formulae of all tartaric acids, indicate asymmetric carbon atoms.
