Code No. 7063 / E / BL

FACULTY OF SCIENCE

B.Sc. (CBCS) III – Semester (Backlog) Examination, May / June 2018
Examination, May / June 2018

Subject : CHEMISTRY

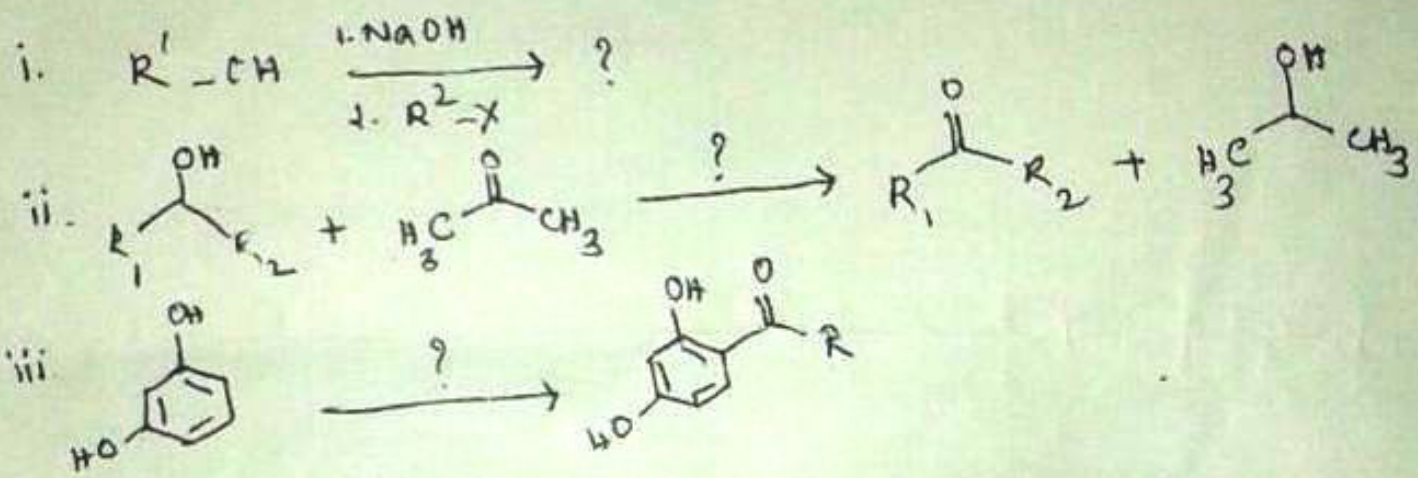
Paper – III

Time : 3 hours **Max. Marks : 80**

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

Answer any Five of the following questions.

1 What is dihedral plane of symmetry? Explain with one example.
2 Explain solvent-extraction method used to separate lanthanides.
3 Complete the following reactions.



4 How can Ar-CHO be prepared from i) arenes ii) benzal halides?
5 What are colloids? Give the classification of colloids with one example each.
6 Draw the phase diagrams of water system, silver lead system.
7 Write a note on structural features of fullerenes.
8 Calculate and write the number and structure of the stereoisomers for
$CH_3 – CH(Br) – CH(Br) – COOH$ and $HOOC – CH(OH) – CH(OH) - COOH$

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

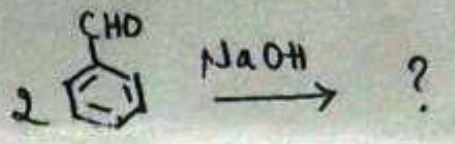
Answer ALL questions from the following :

9 a) i) Discuss the magnetic properties of lanthanides.
ii) Explain the reactions that take place in HF.

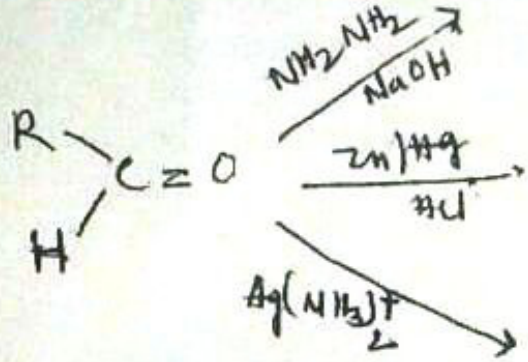
OR

b) i) Explain different types of C_n axes present in BCl_3, CH_4 molecules with diagrams.
ii) Write a note on oxidation states of actinides, and actinide contraction.

10 a) i) Complete and discuss the mechanism of the following reaction.



ii) Complete the following and give the name of the reactions.



OR

b) i) Give the equations for Reimer-Tiemann, Gattermann-Koch and Schotton-Boumann reactions

ii) Explain the acidic nature of phenols

11 a) Explain the phase diagram of Mg-Zn system.

OR

b) Discuss the factors affecting critical micellar concentration of sulfactants.

12 a) What are the applications of nanomaterials?

OR

b) Explain Cahn-Ingold-Prelog rules with two examples.

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