

NOTE: i) All the questions are compulsory.

ii) Figures to right indicate full marks.

iii) Use of non-programmable calculator / log table is allowed.

Q.1. Attempt any four:

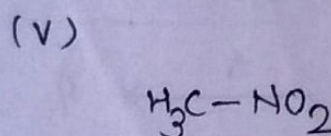
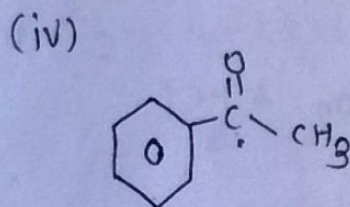
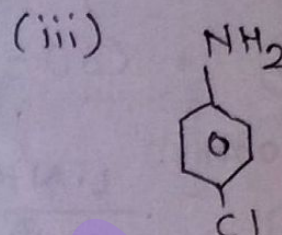
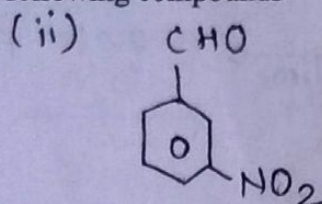
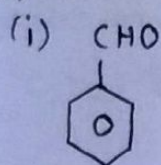
[20]

A) Explain Nitration of Benzene giving its reaction, mechanism and energy profile diagram.

B) Give 5 applications of Nitro compounds.

C) Write a note on Sandmeyer's reaction.

D) Give IUPAC nomenclature of following compounds -



E) Write a note on Knoevenagel Reaction giving its mechanism.

F) Give synthesis of

(1) Orange II

(2) Methyl orange

G) Write 2 advantages of H_2SO_4 in Nitration reaction and Give Synthesis of Congo red.

H) Explain Rosenmund Reduction of Aroyl halide with its mechanism.

Q.2. Attempt any four:

[20]

A) Give reaction and mechanism of Sulphonation of benzene

B) Explain conversion of -

(1) Bromobenzene to benzoic acid by Grignard's reagent.

(2) Ethyl benzene to Benzoic acid.

C) Explain Kolbe Schmidt Reaction.

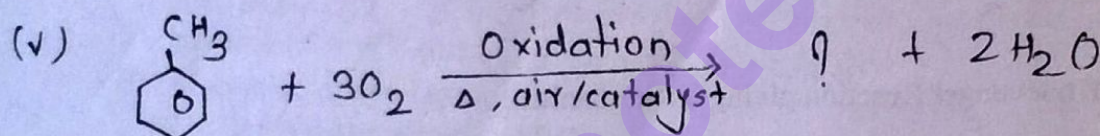
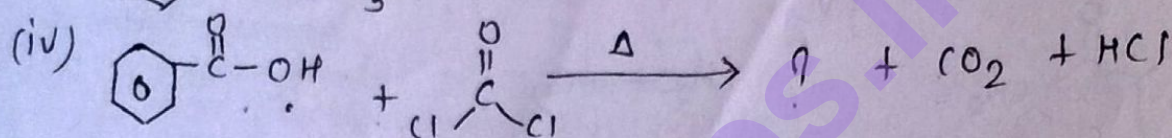
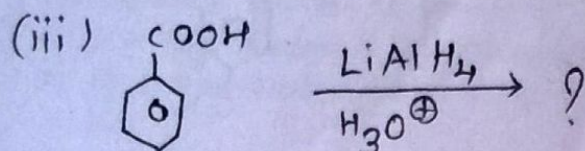
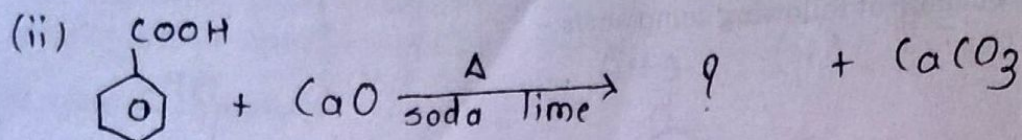
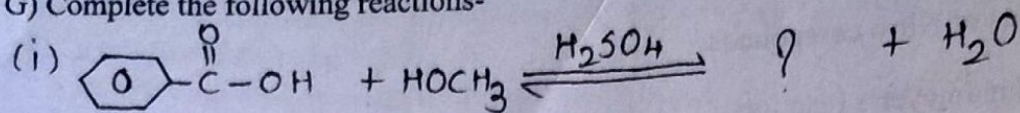
D) Write synthesis of following compounds-

- 1) m-nitro benzoic acid 2) 4-Amino-2-bromo toluene

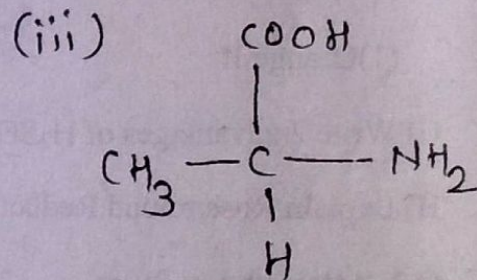
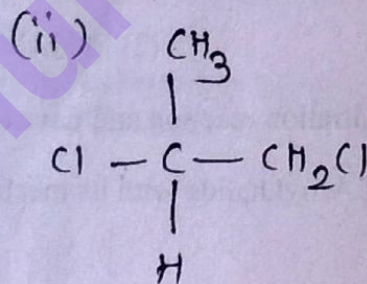
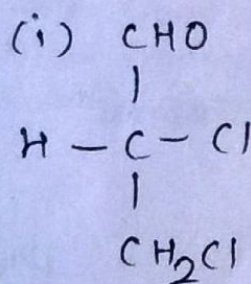
E) How is Benzoic acid prepared from-Aryl nitriles

F) Draw the conformations of n-butane and discuss their relative stabilities.

G) Complete the following reactions-



H) (1) Assign R,S descriptors to the following compounds -



(2) Assign E,Z descriptors to the following compounds-

