

S.Y.B.SC. SEM – III (CBCS - 2016 COURSE) : SUMMER - 2018

SUBJECT: CHEMISTRY: ORGANIC & INORGANIC CHEMISTRY-III

Day : Thursday

Time: 03.00 PM TO 06.00 PM

Date : 19/04/2018

S-2018-0650

Max. Marks: 60

N. B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Both the sections should be written in the **SAME** answer books.

SECTION-I

Q.1 Attempt ANY TWO of the following: (12)

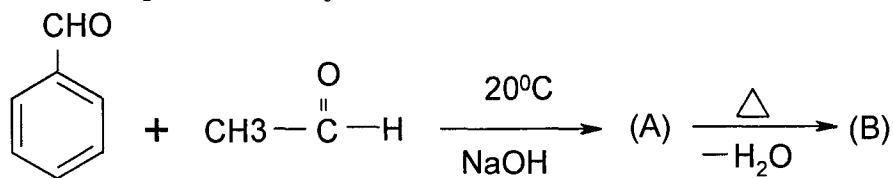
- a) What are different types of addition reactions? Discuss the mechanism of addition of HCl to propylene.
- b) Draw all possible conformers of cyclohexane. With Newman projection explain why is chair form more stable than boat form?
- c) Give synthesis of pyridine. What is the action of following on pyridine?
i) $\text{KNO}_3/\text{H}_2\text{SO}_4$ at 300°C ii) H_2/Pt at 25°C iii) H_2SO_4 at 300°C

Q.2 Attempt ANY THREE of the following: (12)

- a) What are epoxides? Give any one preparation method for the epoxide.
- b) What is SN^2 reaction? Discuss the mechanism of SN^2 reaction with suitable example.
- c) Write a note on Skraup synthesis.
- d) Give synthesis of ether by any one method. What is the action of following reagents on diethylether?
i) Cold HI ii) Hot HI

Q.3 A Attempt ANY ONE of the following: (06)

- a) Predict the products with justification



- b) Baeyer's strain theory failed to explain stability of higher cycloalkanes. Explain.

SECTION-II

Q.3 B Attempt ANY ONE of the following: (06)

- a) Why d- block elements are called as transition metals? Explain general properties of these metals.
- b) Describe 'Calcination' process in metallurgy with suitable diagram.

Q.4 Attempt ANY TWO of the following: (12)

- a) Many compounds of the d- block elements are colored compounds. Explain with suitable examples.
- b) Explain 'Hoope's process for refining of Aluminum.
- c) Write a note on photosynthesis.

Q.5 Attempt ANY FOUR of the following: (12)

- a) Explain the trend in 'density' of d- block elements.
- b) Describe in brief Serpek's process for purification of bauxite.
- c) Explain Electrostatic separation in metallurgy.
- d) The d- block compounds show Nonstoichiometric compounds. Explain.
- e) Explain biological importance of Iron in brief.
- f) What do you mean by leaching in metallurgy?