T.Y.B.SC. SEM – V (2014 Course) : WINTER - 2018

SUBJECT : ORGANIC CHEMISTRY – V (C – 53)

Day : Friday
Date : 12/10/2018

W-2018-0838

Time : 12.00 NOON TO 02.00 PM
Max. Marks : 40

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagrams **WHEREVER** necessary.
4) Answers to both the sections should be written in **SAME** answer book.

SECTION – I

Q.1 Attempt **ANY TWO** of the following: **[10]**

a) What is sulphonation? Discuss the mechanism of sulphonation of benzene.
b) What is SN^2 reaction? Discuss its mechanism. Give factors affecting on it.
c) Write a note on Markownikoff's rule and peroxide effect.

Q.2 Attempt **ANY TWO** of the following: **[10]**

a) Discuss the mechanism of E_1 reaction. Give factors affecting on it.
b) Draw chair conformations of *cis* and *trans* 1, 2 – dimethyl cyclohexane and comment on their stability and optical activity.
c) Write a note on : Activating and deactivating groups.

SECTION – II

Q.3 Attempt **ANY TWO** of the following: **[10]**

a) What is acylation? Discuss the mechanism of Friedel – Craft acylation of benzene. What are its important features?
b) Discuss the stereochemistry of SN^1 reaction.
c) Write a note on : Hoffmann and Saytzeff elimination.

Q.4 Attempt **ANY TWO** of the following: **[10]**

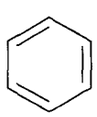
a) Explain the terms:
i) Bredt's rule **ii)** Electrophiles and Nucleophiles.

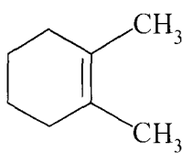
b) Predict the major product/s and suggest the mechanism.

i) $CH_3 - \overset{CH_3}{\underset{|}{C}} = CH_2 \xrightarrow{O_3,\ Zn\ /\ H_2O} ?$

ii) $CH_3 - CH = CH_2 \xrightarrow[H_2O\ /\ H^+]{\text{Cold Conc. } H_2SO_4} ?$

c) Complete the following reactions and suggest the mechanism.

i)  $\xrightarrow{Br_2\ /\ AlBr_3} ?$

ii)  $\xrightarrow[H_2O\ /\ H^+]{OsO_4\ /\ Pyridine} ?$

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