T.Y.B.SC. SEM – V (2014 COURSE) : SUMMER - 2018
SUBJECT : CHEMISTRY : ORGANIC CHEMISTRY – V (C – 53)

Day : **Monday** **S-2018-0745** Time : **03.00 PM TO 05.00 PM**
Date : **16/04/2018** Max. Marks : 40

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) 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^1 reaction? Discuss its mechanism. Give factors affecting on it.
c) Write a note on : Hydroxylation of alkene with peracids.

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

a) Draw chair conformations of *cis* and *trans* 1, 3 – dimethyl cyclohexane and comment on their stability and optical activity.
b) What is E_1 reaction? Discuss its mechanism. Give factors affecting on it.
c) Write a note on : Activating and Deactivating groups.

SECTION – II

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

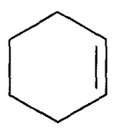
a) What is alkylation? Discuss the mechanism of Friedel-Craft alkylation of benzene. What are its limitations?
b) Discuss the effect of substrate and effect of nucleophile on SN^2 mechanism.
c) Write a note on ; E_1cB reaction.

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

a) Explain the following:
i) Nitrobenzene on nitration gives m – dinitrobenzene.
ii) Hydration of alkene.

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

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

ii)  $\xrightarrow[H_2O/H^+]{\text{Alkaline } KMnO_4} ?$

c) Complete the following reactions and suggest the mechanism:

i) $CH_3 - CH = CH_2 + HBr \xrightarrow{H_2O_2} ?$

ii)  $+ Cl_2 \xrightarrow{\text{Anhydrous } AlCl_3} ?$

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