Bachelor of Science (B.Sc.) Second Semester (Old)

2SChe-T1 – Chemistry : Paper-I (Organic Chemistry)

P. Pages : 2 **GUG/W/18/1232**

Time : Three Hours * 0 9 4 5 * Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.
2. Write chemical reactions and draw diagram wherever necessary.

1. a) Explain SN^2 mechanism of substitution in alkyl halide with energy profile diagram. **5**

b) Explain nucleophilic substitution reaction in Benzene with its mechanism. **5**

OR

c) Give the Sandmeyers reaction. **2½**

d) Compare the reactivity of Vinyl and allyl chloride. **2½**

e) Discuss the $\in_2$ mechanism. **2½**

f) What is the action of following reagent on benzyl chloride. **2½**
i) KOH
ii) Alk. $KMnO_4$

2. a) Give the reaction and mechanism of Fries Rearrangement Reaction. **5**

b) Discuss Pinacal-Pinacolone rearrangement reaction with mechanism. **5**

OR

c) Explain the effect of heat on glycerol in presence of $KHSO_4$. **2½**

d) Write the Houben-Hoesch reaction. **2½**

e) How will you prepare diethyl ether from ethyl alcohol? **2½**

f) How will you prepare phenol from cumene. **2½**

3. a) Explain the structure and reactivity of Carbonyl group. **5**

b) Write notes on: **5**
i) Rosenmunds Reduction
ii) Gattermann-Koch reaction

OR

c) Give Benzoin condensation reaction. **2½**

	d)	Write note on Wittig Reaction.	**2½**
	e)	How will you prepare acetaldehyde from ethyl alcohol.	**2½**
	f)	Discuss Mannich Reaction.	**2½**
4.	a)	What is Ionic Polymerisation? Give the mechanism of Cationic polymerisation.	**5**
	b)	What are polyamide polymers? Give the preparation of Nylon 66 and its uses.	**5**

OR

	c)	Write about Phenol -formaldehyde resin.	**2½**
	d)	Give the classification of polymers.	**2½**
	e)	Explain the general methods of polymerization.	**2½**
	f)	Explain Vulcanization of Rubber.	**2½**

5. Attempt **any ten.** **1x10=10**

i) Draw energy profile diagram for SN^1 reaction

ii) Why is alkyl halide more reactive than aryl halide?

iii) What is PVC?

iv) Explain the Dioxane formation from glycerol.

v) Give the dehydration product of glycol.

vi) Write the formula of Resorcinol.

vii) Write note on Perkin Reaction.

viii) Explain preparation of acetaldehyde from acid chloride.

ix) What is Wolff Kishner Reduction.

x) Give an example of Copolymers.

xi) Give two applications of Buna-N-rubber.

xii) What is PLA?

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