

Enrollment No: _____

Exam Seat No: _____

C. U. SHAH UNIVERSITY

Winter Examination-2021

Subject Name : Physical Chemistry-II

Subject Code : 5SC02PCH1

Branch: M.Sc. (Chemistry)

Semester: 2

Date: 20/10/2021

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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SECTION – I

Q-1	Attempt the Following questions	(07)
a.	Give the definition of polymer.	01
b.	What are isotactic polymers?	01
c.	What would be the catalyst in cationic polymerization?	01
d.	Write down the structure of polystyrene.	01
e.	What is telomerization?	01
f.	Give any two examples of natural polymer.	01
g.	Define copolymer.	01

Q-2	Attempt all questions	(14)
a.	Explain the classification of polymers.	07
b.	What are stereo regular polymers? Explain in detail.	07

OR

Q-2	Attempt all questions	(14)
a.	Write a note on functionality of monomers.	05
b.	What are copolymers? Discuss its various types.	05
c.	Give the difference between isotactic and atactic polymers.	04



Q-3	Attempt all questions	(14)
a.	Discuss anionic polymerization and its kinetics.	07
b.	Explain the copolymerization.	07

OR

Q-3	Attempt all questions	(14)
a.	Explain kinetics of free radical copolymerization. Also discuss the effect of reactivity ratio on degree of polymerization.	05
b.	Explain the polymerization in presence of KNH_2 in liquid NH_3	05
c.	Discuss the effect of monomer concentration and pressure on free radical polymerization	04

SECTION – II

Q-4	Attempt the Following questions	(07)
a.	Define the term: polycondensation.	01
b.	What is the order of intermolecular polycondensation reaction?	01
c.	Give the definition of Gel point	01
d.	How the molecular weight can be controlled in polymerization?	01
e.	Define the number fraction	01
f.	How the adding of a monofunctional group affect the polycondensation?	01
g.	Which factors favor the cyclization reaction?	01

Q-5	Attempt all questions	(14)
a.	Discuss the kinetics of polycondensation reaction.	07
b.	Explain molecular weight control in polycondensation reaction.	07

OR

Q-5	Attempt all questions	(14)
a.	Discuss in detail about the interfacial polycondensation reaction.	07
b.	Discuss the effect of monomer concentration and temperature on polycondensation.	07



- Q-6** **Attempt all questions** **(14)**
- a. What is cyclization reaction? Explain with example. 05
- b. Explain the chemical degradation of polymers. 05
- c. Give the types of degradation reaction. 04

OR

- Q-6** **Attempt all Questions**
- a. Discuss the mechanism of ring scission polymerization. 07
- b. Discuss vulcanization of rubber. 07

