BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP2023)

CLASS: IMSc   SEMESTER : VI
BRANCH: CHEMISTRY   SESSION : SP2023

SUBJECT: CH317 POLYMER CHEMISTRY

TIME: 02 Hours   FULL MARKS: 25

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. **Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	Define semisynthetic polymer. Give example.	[2]	1	1
Q.1(b)	Discuss about the classification of polymers on the basis of tacticity.	[3]	1	2
Q.2(a)	What do you mean by oriented and unoriented crystallinity?	[2]	1	2
Q.2(b)	Briefly describe the secondary structure of the polymers.	[3]	1	1
Q.3(a)	Explain the term step-growth and chain polymerization.	[2]	2	1
Q.3(b)	Why free radical initiator is mostly chosen for chain polymerization?	[3]	2	2
Q.4(a)	What is Ziegler-Natta catalyst? Explain its importance.	[2]	2	1
Q.4(b)	Derive the rate expression for acid catalyzed step-growth polymerization.	[3]	2	1
Q.5(a)	Write the significance of PDI.	[2]	1	2
Q.5(b)	Derive the relation of number average and weight average molecular weight of polymer.	[3]	1	1