

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: B.TECH.  
BRANCH: CHEMICAL ENGINEERING**

**SEMESTER : V  
SESSION : MO/2023**

**SUBJECT: CL341 POLYMER TECHNOLOGY**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
- 

		CO	BL
Q.1(a)	For manufacturing of pipe for watering plants in garden, choose the type of polymer and additives will you choose? Justify your answer.	[5] 5	5
Q.1(b)	Categorize flame retardants based on working principle in extinguishing fire.	[5] 4	4
Q.2(a)	Distinguish LDPE, LLDPE and HDPE with suitable line diagram.	[5] 4	4
Q.2(b)	List out the characteristic's properties of polycarbonate? Write down typical applications of polycarbonate.	[5] 2	1
Q.3(a)	What are the roles of styrene in unsaturated polyester resin? How crosslinking is done in unsaturated polyester resin?	[5] 1	1
Q.3(b)	Compare between novolac and resol resin. Write down some typical applications of epoxy resin.	[5] 1	4
Q.4(a)	Define the role of compatibilizer in polymer blends. Name a commercial polymer blend and write down its characteristic features.	[5] 1	1
Q.4(b)	With suitable diagram demonstrate the pultrusion process.	[5] 1	2
Q.5(a)	Why plastics play an important role in automotive applications? Write down 5 automotive applications areas with suitable polymers used.	[5] 3	1
Q.5(b)	What are the different types of reinforcements and resins used for aerospace applications? With justification, select 3 polymer systems which are suitable for cable application.	[5] 3	3

:::28/11/2023:::M