

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

**CLASS: B.TECH.
BRANCH: CHEMICAL ENGG.(P&P)**

**SEMESTER : VII
SESSION : MO/2023**

SUBJECT: CL407 POLYMER TECHNOLOGY II

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.
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			CO	BL
1a	List the limitations of USP and vinyl ester over Epoxy resin. How can we make transparent moldings with PPO?	2+3	CO1	Analyze
b	Describe any one process of glass fibre reinforced composite manufacturing with unsaturated polyester.	5	CO1	Remember
2a	What are the limitations of polyacetal resins? Describe the steps of polysulphone manufacturing process.	2+3	CO2	Remember
b	Compare the properties of PE and POM on the basis of their chemical structures.	5	CO4	Evaluate
3a	Explain the working mechanism of thermo-responsive polymer while drug delivery application. Which polymers are used in 3D printing for tissue engineering? Explain the mechanism of such method of printing.	2+3	CO3	Evaluate
b	Which plastics are used for making the following: Bucket, sauce pan handle, propeller in washing machine, refrigerator outer body, pressure cooker gasket	5	CO5	Create
4a	Which experiments are useful to measure miscibility and compatibility of polymers in a blend? Write down the Flory Huggins equation and describe the factors that control the miscibility of polymer blends.	2+3	CO4	Remember
b	Give an example of a commercial polymer blend. Write down the characteristic features of it and mention its use.	5	CO3	Analyze
5a	Classify the composites on the basis of the types of matrices, reinforcement and process of manufacture. Give examples of each kind. Distinguish the advantages and disadvantages of thermosets and thermoplastic resin-based composites.	1+2+ 2	CO5	Remember
b	Draw the schematic diagram of pultrusion process for manufacturing epoxy resin based composite panels.	5	CO5	Evaluate

:::21/11/2023:::M