

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

**CLASS: BTECH  
BRANCH: CHEMICAL ENGINEERING**

**SEMESTER : VII  
SESSION : MO/2025**

**SUBJECT: CL425 PLASTIC PACKAGING 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.
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		CO	BL
Q.1(a)	What are the benefits of packaging? Write about the characteristic features of industrial packages.	[5] 1	1
Q.1(b)	Discuss the principle of protective packaging. Write brief notes on materials used in protective packaging	[5] 1	2
Q.2(a)	What do you mean by the shelf life of canned foods? Describe how foods and drinks are packaged in metal packages.	[5] 2	1
Q.2(b)	What are the fibre sources of paper-based packaging? Discuss fibre separation pulping processes.	[5] 2	2
Q.3(a)	What are the basic differences among the different types of polyethylene? Write the basic features and applications of polyethylene terephthalate as a packaging material.	[5] 3	2
Q.3(b)	Write short notes on polyamide as a packaging material.	[5] 3	1
Q.4(a)	What are the differences between gravure and flexographic printing? Draw the schematic diagram of both processes.	[5] 4	2
Q.4(b)	What is a retort pouch? Discuss the roles of different layers of the retort pouch. Mention 2 modified atmosphere packaging (MAP) gases along with their role in novel food packaging applications.	[5] 4	3
Q.5(a)	What is intelligent packaging? Mention 2 intelligent packaging techniques in detail.	[5] 5	1
Q.5(b)	Discuss different recycling processes. Mention the advantages and limitations of all the recycling processes.	[5] 5	2

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