



# MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH. OE IV

**END SEMESTER EXAMINATIONS, NOV 2022**

**SUBJECT: PACKAGING DESIGN AND DEVELOPMENT [MED 4303]**

**REVISED CREDIT SYSTEM**

Time: 3 Hours

25/11/22

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **all the** questions.
- ❖ Missing data may be suitable assumed.

<i>Qn no:</i>	<i>Question</i>	<i>M</i>	<i>CO</i>	<i>BTL</i>
1	Discuss the 5 factors to be considered while developing a package.	3	1	2
2	With neat diagram, explain the process of manufacturing BOPP plastic substrate.	3	3	2
3	With neat diagrams, explain the process of manufacturing glass and glass containers.	4	4	2
4	With neat diagrams, explain the 3 types of level fillers used for the packaging of liquid products.	3	5	3
5	Discuss the functions of 5 departments involved in the production of cartons.	3	2	2
6	Discuss the implications of packaging and 8 recent trends in food packaging.	4	6	3
7	With neat sketch, explain various parts of a glass bottle and its importance to be considered during its design.	3	4	2
8	Discuss the features of 3 types of Cushioning materials.	3	1	1
9	With neat diagrams, explain the working of Vertical and Horizontal form-fill-seal machines used in packaging industry.	4	5	2
10	With neat diagram, explain the process of manufacturing single facer corrugated board.	3	2	2
11	With neat diagrams, explain the 5 ways of producing thermo-formed plastic containers.	3	3	1

12	Explain the importance and procedure for 4 tests done particularly on corrugated boards used for packaging.	4	2	2
13	Compare 2-piece and 3-piece cans for their features and manufacturing processes.	3	4	2
14	With neat diagrams, explain the reciprocating and ram type of injection moulding machines.	3	3	1
15	Explain the 4 tests done on packages to resist climatic hazards.	4	1	1