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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL / MAY 2025

B.E PRINTING AND PACKAGING TECHNOLOGY

Semester VI

PT5601 - Packaging Techniques and Processes

(Regulation 2019)

Time: 3hrs

Max. Marks: 100

CO1	Articulate the types of packages and manufacturing processes
CO2	Comprehend the importance of package design for various applications
CO3	Analyze various test methods for package suitability
CO4	Summarize the concepts of food, Pharma, and FMCG packaging
CO5	To create the design of primary, secondary, and tertiary packaging

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A (10x2=20 Marks)

Q.No.	Questions	Marks	CO	BL
1	Classify bacteria based on their response to temperature.	2	5	L4
2	Differentiate between consumer package and industrial package.	2	5	L4
3	What is market segmentation?	2	2	L2
4	How color influences human psychology about a product?	2	2	L4
5	Differentiate between food and pharmaceutical packaging.	2	4	L4
6	What is a retort package?	2	4	L1
7	What method is applied for filling carbonated beverages?	2	1	L2
8	Differentiate between level filling and volumetric filling.	2	1	L4
9	How to compute box compression strength from edge compressing strength?	2	3	L3
10	What is loose load vibration? How does it differ from stacked/vehicle vibration?	2	3	L4

PART- B (5x13=65 Marks)

Q.No.	Questions	Marks	CO	BL
11 (a)	Analyze the life cycle assessment of a milk sachet. Identify the key stages and evaluate their environmental impacts.	13	5	L4
OR				
11 (b)	Analyze distribution hazards to a package and propose risk mitigation strategies.	13	5	L4
12 (a)	With neat diagram explain the design features of a bottle along with a threaded closure.	13	2	L2
OR				
12 (b)	Explain the process involved in designing graphics for a package.	13	2	L2
13 (a)	Explain the process involved in selecting optimum cushioning material and thickness for protective packaging.	13	4	L2
OR				
13 (b)	With neat diagram explain the types of closures used in packaging.	13	4	L2



14 (a)	Illustrate and explain the stages involved in the manufacturing of folding carton boxes with a neat diagram.	13	1	L3
OR				
14 (b)	Illustrate and explain the manufacturing process of three-piece and two-piece cans with a neat diagram.	13	1	L3
15 (a)	Analyze the effectiveness of various testing methods for assessing the strength of paper board. Compare and contrast their advantages and limitations.	13	3	L3
OR				
15 (b)	Apply the principles of distribution testing to evaluate the durability of shipping containers. Describe the process and the expected outcomes.	13	3	L4

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	Design a package for a toy car with dimensions 15 cm (length) x 8 cm (width) x 5 cm (height). Consider factors such as functionality, aesthetics, sustainability, and user experience. Provide a detailed sketch to illustrate your design and also provide justifications for the design elements and features.	15	5	L6

