

B.E. PRINTING ENGINEERING SECOND YEAR FIRST SEMESTER - 2025

Subject : PACKAGING TECHNIQUES-I

Time: 3 Hr.

Full Marks: 100

Answer the questions under one CO together in one place.

CO1: Describe the different packaging aspects, materials and processes (K2)

1. Answer any 5 questions (5 X 7 = 35)

- a) Describe convenience and protection aspects of packaging with suitable examples. 7
- b) Describe kraft paper, glassine paper and tissue paper in the context of packaging with their application examples. 7
- c) Describe briefly about bio-based packaging. 7
- d) Describe any four types of the closures commonly used for bottles. 7
- e) Describe the advantages and disadvantages of wood as packaging material and some of the areas of its application as packaging material. 7
- f) Describe different gases used in MAP and their suitable applications. 7
- g) Describe different methods of package evaluation. 7

CO 2: Illustrate the methods of different package forming (K2)

2. Answer any 5 questions (5 X 7 = 35)

- a) Illustrate the vertical FFS process. 7
- b) Illustrate the DWI can making process. 7
- c) Illustrate any 3-piece can making process of wooden box design. 7
- d) Illustrate the process of corrugated board manufacturing. 7
- e) Illustrate the extrusion blow molding process. 7
- f) Illustrate the thermoforming process. 7
- g) Illustrate style 4, 5 and 6 of wooden boxes. 7

CO 3: Calculate the packaging parameters (K3)

3. Answer any 3 questions (3 x 5 = 15)

- a) A package receives 50, 100, 200, 100, 50 and 60mm drops. If $a=3$ find the number of drops it from 200 mm. 5

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- b) Calculate the thermal stress of a 1 inch thick glass bottle for which the internal and external temperatures are 12°C and 30°C , respectively. 5
- c) Calculate the load that can be carried by a box fastened with 8 8d threaded nails and made with the wooden plank of width 0.75inch? 5
- d) Calculate the BCT for a corrugated box board of dimension 6 ft×2 ft×2 ft (W×H× L) made with 2 inch thick corrugated board and that collapses at 45 kg of load. 5

CO 4: Compare between packaging materials and processes (K4)

4. Answer any 3 questions (3 x 5 = 15)

- a) Compare between conventional packaging and MAP. 5
- b) Compare between plastic and paper in context of packaging. 5
- c) Compare between glass and plastic in the context of packaging. 5
- d) Compare between TFS and ECCS. 5