



V SEMESTER B.TECH. (PRINT AND MEDIA TECHNOLOGY)

END SEMESTER EXAMINATIONS, NOVEMBER 2019

SUBJECT: PACKAGING TECHNIQUES AND PROCESSES [PMT 4003]

REVISED CREDIT SYSTEM

(25/11/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.

- 1A.** i) Compare shrink and stretch wrapping.
ii) Explain the lamination process used to join 2 plastic substrates with neat diagram.
- 1B.** Explain the process of manufacturing metallised films with neat diagram.
- 1C.** A poultry farm owner needs egg trays made from molded pulp. Explain the 2 methods of manufacturing them along with other applications of molded pulp.
[(02+02) + 03 + 03]
- 2A.** i) Discuss the features of the following paper bag designs;
a) Satchel bags with side gussets
b) Strip window bags
ii) Explain the process of hot foil stamping with neat diagram.
- 2B.** List and explain the features of 5 types of embossing dies.
- 2C.** Explain how aseptic packaging is different from sterilizing a packed product with diagrams.
[(02+02) + 03 + 03]
- 3A.** i) Explain thermoform method of manufacturing blister package with neat diagram.
ii) With neat diagram, explain bar sealing method used to seal pouches.

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3B. With neat sketches, discuss the features of the following closures;

- a) ROPP metal closure b) Crimped crown cork

3C. With neat sketches, explain convolute and spiral winding methods of manufacturing paper composite cans.

[(02+02) + 03 + 03]

4A. i) Explain how graphics and color of the package influence its design.

ii) Discuss the features of plain paper labels and in-mold labels.

4B. Explain the working of a VFFS machine with neat diagram.

4C. A pharmaceutical company needs to pack ointment. Explain various steps involved in the manufacturing process of aluminium collapsible tube.

[(02+02) + 03 + 03]

5A. i) Explain the procedure for testing the following properties of blister package.

- a) Water vapour transmission rate b) Vacuum

ii) Explain how material storage influence the quality or efficiency aspects of packaging operations.

5B. A customer needs to filling machine for moist blown sugar which is a non-free-flowing material. Identify and explain the features of the volume filler with neat diagram.

5C. With neat sketches, discuss the features of the following liquid packaging cartons;

- a) Gable top b) Pyramid c) Wedge

[(02+02) + 03 + 03]