



### VII SEMESTER B.TECH. (PRINT & MEDIA TECHNOLOGY)

**END SEMESTER EXAMINATIONS, NOV 2019**

**SUBJECT: SMART PACKAGING [PMT 4004]**

**REVISED CREDIT SYSTEM**

**(26/11/2019)**

Time: 3 Hours

MAX. MARKS: 50

#### Instructions to Candidates:

❖ Answer **ALL** the questions.

- 1A. Write a structure of Barcode and label its parts. Explain the factors affecting the Barcode readability.
- 1B. Explain in detail the Ethanol Emitters utilized in Smart packaging.
- 1C. What are the important aspects to be considered for labeling of smart packaging?  
[ 04 + 03 + 03 ]
- 2A. Explain in detail about the outlook and future developments of smart packaging technologies.
- 2B. Explain how RH and Gas Atmosphere effect the shelf life of a product.
- 2C. Explain the principle and the applications of LSA technology.  
[ 04 + 03 + 03 ]
- 3A. List the merits and demerits of Inkjet Printing and LASER Printing for printing Barcodes.
- 3B. Explain in detail about the Aldehyde or Aroma Scavengers utilized in fish and sea food packaging.
- 3C. Explain in detail the applications and benefits of using nanotechnology in food packaging.  
[ 04 + 03 + 03 ]
- 4A. With a schematic diagram explain the working of and RFID Tag.
- 4B. Explain in detail about the Enzymatically Active Packages utilized for Dairy products packaging.
- 4C. Define Active Packaging, explain how Ph and Water activity effect the shelf life of a product in Active Packaging.  
[ 04 + 03 + 03 ]
- 5A. Explain in detail about the SSO's causing damage to the fish and sea food products.
- 5B. Brief the twelve benefits of Intelligent Packaging.
- 5C. Explain the solutions available to enhance the shelf life of the dairy products.  
[ 04 + 03 + 03 ]