

**VII SEMESTER B.TECH. (PRINT AND MEDIA TECHNOLOGY)****END SEMESTER EXAMINATIONS, MARCH 2021****SUBJECT: SMART PACKAGING [PMT 4004] - PE-V****REVISED CREDIT SYSTEM**

Time: 3 Hours

Date: 24/03/2021

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A.** As per the general safety guidelines for food packaging what are the consequences of misleading claims? Explain with two suitable examples.
- 1B.** Discuss two best methods to extend the shelf life of fruits.
- 1C.** Compare the effect of water content and gas atmosphere of food product on its quality.

[03 + 03 + 04]

- 2A.** Explain two major smart packaging techniques for fish and sea food packaging with proper justification.
- 2B.** Discuss how do latest innovations in packaging technology made our life safe and comfortable? Explain with two suitable examples.
- 2C.** Explain two innovations in smart packaging for milk products in detail.

[03 + 03 + 04]

- 3A.** Discuss the various applications and advantages of RFID tags in smart packaging.
- 3B.** Distinguish between humidity absorber and aldehyde scavengers used in food packaging
- 3C.** Differentiate between inkjet and direct thermal transfer printing techniques for barcode printing.

[03 + 03 + 04]**P.T.O**

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- 4A.** Differentiate between the oxygen scavenging film and iron based oxygen absorbers.
- 4B.** Compare between the technical features of Passive and active RFID tags.
- 4C.** Distinguish between Barcode printing and Laser surface authentication techniques used in packaging industry.

[03 + 03 + 04]

- 5A.** Discuss the added advantages of smart packaging for poultry products over MAP packaging.
- 5B.** A production manager of a carton box packaging unit, wanted to implement laser surface authentication technique to avoid the duplication of his products. As a technical expert what would be your suggestions to him in order to successfully implement this security feature? Explain in detail.
- 5C.** With a neat diagram explain the structure and working of a beverage bottle to scavenge oxygen present in the liquid food product.

[03 + 03 + 04]
