BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSC **SEMESTER : V**
BRANCH: FOOD TECHNOLOGY **SESSION : MO/19**

SUBJECT: IMF5001 FOOD PACKAGING TECHNOLOGY

TIME: 3 HOURS **FULL MARKS: 60**

INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)	Discuss the role of different layers in protective packaging.	[2]
Q.1(b)	Tabulate the features of effective packaging design.	[4]
Q.1(c)	Describe the various features of industrial packaging.	[6]
Q.2(a)	Define Intelligent Packaging.	[2]
Q.2(b)	Describe the role of antimicrobial packaging in extending the shelf life.	[4]
Q.2(C)	Discuss the role of humidity and moisture control agents in active packaging.	[6]
Q.3(a)	Define Non-migratory bioactive polymers (NMBP).	**[2]**
Q.3(b)	Write down the disadvantages of NMBP.	[4]
Q.3(c)	Short Notes: Inherently bioactive polymers	[6]
Q.4(a)	Explain the working principle of RFID tag.	[2]
Q.4(b)	Discuss the features of TTIs in active packaging.	[4]
Q.4(c)	Classify the different types of RFID tags with relevant features.	[6]
Q.5(a)	Define modified atmosphere packaging (MAP).	[2]
Q.5(b)	Discuss the role of carbon dioxide and nitrogen gases in MAP.	[4]
Q.5(C)	Illustrate the roles of polyethylene and nylon in MAP.	[6]
Q.6(a)	Explain the term ‘Green Plastics’?	[6]
Q.6(b)	Describe the applications of starch and PLA based biopolymers.	[6]
Q.6(C)	Discuss any two bio-polymers related to food packaging.	
Q.7(a)	Differentiate between primary and secondary recycling.	[2]
Q.7(b)	Describe how can you manage the plastic waste generated from food packaging material?	[4]
Q.7(c)	Discuss the different stages of food packaging material recycling.	[6]

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