

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

**CLASS: IMSC
BRANCH: FOOD TECH**

**SEMESTER : V
SESSION : MO/2023**

SUBJECT: FT331 FOOD PACKAGING TECHNOLOGY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 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.
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Q.1(a)	Discuss the different types and materials of protective packaging.	[5]	CO	BL
Q.1(b)	Discuss the various types of food preservation methods.	[5]	CO1	BL2
			CO2	BL2
Q.2(a)	Explain the attributes of food packaged in glass containers.	[5]	CO3	BL4
Q.2(b)	Discuss the properties of paper and paperboard material which makes suitable for packaging.	[5]	CO3	BL2
Q.3(a)	Discuss the structure and properties for the following materials.	[5]	CO3	BL2
	(i) Polyvinylidene chloride (PVdC)			
	(ii) Polyethylene (PE)			
Q.3(b)	Explain the process of metallizing with aluminium with a neat sketch.	[5]	CO4	BL4
Q.4(a)	Explain oxygen and carbon di-oxide scavengers in active packaging techniques.	[5]	CO4	BL4
Q.4(b)	Discuss the following intelligent packaging techniques.	[5]	CO4	BL2
	(i) Gas indicator			
	(ii) Thermochromic inks			
Q.5(a)	Discuss the following biopolymers used in packaging.	[5]	CO5	BL2
	(i) Polyhydroxyalkanoates			
	(ii) Thermoplastic starch			
Q.5(b)	Explain the various methods used for testing the safety and quality of recycled material.	[5]	CO5	BL4

:::24/11/2023:::M