

**GURU NANAK INSTITUTE OF TECHNOLOGY**  
**An Autonomous Institute under MAKAUT**  
**2020-2021**

**Food Packaging Technology**  
**FT703C**

**TIME ALLOTTED: 3 HOURS**

**FULL MARKS: 70**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable*

**GROUP – A**

**(Multiple Choice Type Questions)**

Answer any *ten* from the following, choosing the correct alternative of each question: **10×1=10**

|       |   | <b>Marks</b> | <b>CO No</b> |
|-------|---|--------------|--------------|
| (i)   | The marketing advantage for Aluminum is its<br>a) Impermeable to moisture & gases<br>b) Withstand heat<br>c) Lightweight & not breakable<br>d) Recyclable   | 1            | CO5          |
| (ii)  | DRD process is used for<br>a) TFS made can<br>b) Two-pieces can<br>c) Three pieces can<br>d) Paper  | 1            | CO2          |
| (iii) | Packaging material used for packaging of fats and oils is<br>a. HDPE<br>b. LLDPE<br>c. Nylon<br>d. PP   | 1            | CO1          |
| (iv)  | Biodegradable film can be produced from<br>a. LDPE<br>b. Chitosan<br>c. PP<br>d. PVC  | 1            | CO3          |
| (v)   | The acid gas is<br>a) Methane<br>b) Ethylene<br>c) Sulphur di-oxide<br>d) none of these   | 1            | CO1          |
| (vi)  | In the history of packaging of the food industry, which among these was never a material of packaging?<br>a) Bakelite<br>b) Pottery and vases<br>c) Iron and tin plated steel<br>d) None of the mentioned | 1            | CO1          |
| (vii) | Which of the following is a must in food labeling?<br>a) Name<br>b) Standard Specification<br>c) Place of Origin<br>d) All of the mentioned   | 1            | CO4          |

|        |  |   |     |
|--------|--|---|-----|
| (viii) | Which of the following need not be in the same vision of field?<br>a) Product name<br>b) Quantity<br>c) Date mark<br>d) Place of Origin                    | 1 | CO4 |
| (ix)   | Which of the following is a must in food labeling?<br>a) Name<br>b) Standard Specification<br>c) Place of Origin<br>d) All of the mentioned                | 1 | CO4 |
| (x)    | What does FSS stand for?<br>a) Food set and sound<br>b) Food Secure and Safe<br>c) Food Safety and Security<br>d) Food sour and sign                       | 1 | CO4 |
| (xi)   | According to CODEX standards, which of the following food items is hypersensitive?<br>a) Cereals<br>b) Nuts<br>c) Milk Products<br>d) All of the mentioned | 1 | CO4 |
| (xii)  | What does PHB stand for?<br>a) Polyhydrobutyl<br>b) Polyhydroxybutyrate<br>c) Polyhydroxybutene<br>d) Polyhydroxybutane                                    | 1 | CO3 |

**GROUP – B**

**(Short Answer Type Questions)**

Answer any *three* from the following: **3×5=15**

|    |  | <b>Marks</b> | <b>CO No</b> |
|----|--|--------------|--------------|
| 2. | What are the advantages of edible packaging materials?                             | 5            | CO3          |
| 3. | (a) What are Oxo-Biodegradable (OBD) Polymers?                                     | 3            | CO4          |
|    | (b) What are the advantages of using nano-composite materials in food packaging?   | 2            | CO4          |
| 4. | (a) What are biodegradable polymer films?  | 3            | CO3          |
|    | (b) Give some examples of its potent application in the different food industries? | 2            | CO3          |
| 5  | Briefly Discuss the disposal of packaging material.                                | 5            | CO3          |
| 6  | Discuss the lap seal and fin seal with proper example.                             | 5            | CO5          |

**GROUP – C**

**(Long Answer Type Questions)**

(Answer any *three* of the following)

|    |                                    | <b>3 x 15 = 45</b> |              |
|----|------------------------------------|--------------------|--------------|
|    |                                    | <b>Marks</b>       | <b>CO No</b> |
| 7. | Write short notes: (any three)     | 3x5                |              |
|    | (a) Aseptic packaging              | 5                  | CO4          |
|    | (b) Shrink films and stretch films | 5                  | CO2          |

|     |     |   |   |            |
|-----|-----|---|---|------------|
|     | (c) | Thermoforming   | 5 | CO5        |
|     | (d) | Testing of packaging films  | 5 | CO1        |
|     | (e) | Barcode or electronic product code  | 5 | CO2        |
| 8.  | (a) | Statement: “The term scalping is used to refer to the uptake of components of the food such as flavor, aroma, and pigments by plastic packaging. Sorption properties are largely determined by the characteristics of the package, the properties of the flavor molecules, food matrix composition, and environmental conditions. As well as a loss of aroma, sorption of organic molecules can also affect the mechanical properties of polymer films such as a reduction in seal and tensile strengths, and an increase, Oxygen permeability by two to four times”<br>Justify the Statement with proper example (at least 2 example is mandatory) | 8 | CO5        |
|     | (b) | Discuss the types of paper and their applications in food packaging.  | 4 | CO2        |
|     | (c) | Write a short note on barcodes and QR Code  | 3 | CO4        |
| 9.  | (a) | What are the characteristics and properties of printing inks  | 6 | CO4        |
|     | (b) | Briefly Discuss the types of interaction between packaging and food material  | 5 | CO2<br>CO5 |
|     | (c) | What are the factors against the reduction of packaging cost?   | 4 | CO3        |
| 10. | (a) | What is the function of labeling in food packaging  | 4 | CO4        |
|     | (b) | What are the crucial factors that play important role in the transportation of food material  | 4 | CO2        |
|     | (c) | Briefly discuss the types of plastics and their general properties in the case of food packaging  | 7 | CO2        |
| 11. | (a) | point out the four categories in biodegradable material   | 4 | CO4        |
|     | (b) | Discuss the Drawn and Redrawn of cans with appropriate pictures   | 6 | CO2        |
|     | (c) | Describe the forming process of glass from gob  | 5 | CO2        |