



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech (FT)/SEM-7/FT-701/2010-11**

**2010-11**

**FOOD PACKAGING TECHNOLOGY**

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 )**

1. Choose the correct alternatives for the following :  $10 \times 1 = 10$

i) Benzophenone is actually

- a) diphenyl alcohol      b) diphenyl ketone  
c) propyl benzene      d) phenyl propane.

ii) The principal ingredient of glass is

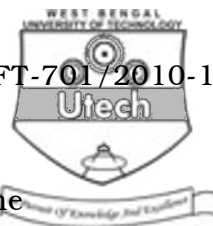
- a) Calcium oxide      b) Alumina  
c) Silica      d) Potash alum.

iii) The full name of ECCS is

- a) Electrically Complex Compound Searching  
b) Electrolytically Chromuun Coated Steel  
c) Electrolytically Copper Coated Steel  
d) Electrolytically Chromium Compound Steel.



- iv) "One volume" CO<sub>2</sub> means
- a) 1 gm/litre of CO<sub>2</sub>      b) 2 gm/litre of CO<sub>2</sub>  
c) 3 gm/litre of CO<sub>2</sub>      d) 4 gm/litre of CO<sub>2</sub>.
- v) Injection molding of the polymer is to achieve
- a) high speed molding of thermoplastics  
b) low speed molding of thermoplastics  
c) high speed molding of thermosetting plastics  
d) low speed molding of thermosetting plastics  
e) none of these.
- vi) The full name of PET is
- a) Polyester Terephthalate  
b) Polyester Trimethylene  
c) Polyethylene Terephthalate  
d) Polyethylene Trans-butadiene.
- vii) Low melt flow index ( MFI ) of PE film is in between 0.1 to 0.6. It indicates
- a) high melt viscosity  
b) low melt viscosity  
c) weak shrinkage force is available  
d) none of these.
- viii) Plastics are
- a) compostable      b) non-compostable  
c) bio-degradable      d) none of these.



- ix) The acid gas is
- Methane
  - Ethylene
  - Sulphur dioxide
  - None of these.
- x) For very difficult to heat seal material ( like nylon 6/6 film ) which of the following heat sealing equipment is used ?
- Ultrasonic sealing
  - Induction sealing
  - Dielectric sealing
  - None of these.

### GROUP – B

#### ( Short Answer Type Questions )

Answer any *three* of the following.  $3 \times 5 = 15$

- Write short notes on the following :  $2 \times 2\frac{1}{2}$ 
  - Tensile strength
  - Optical tests.
- Mention two characteristic features of rigid, semirigid and flexible containers with examples from each category.
- Discuss the role of Aluminium in various steps of packaging.
- LDPE is not suitable for packaging of oils and fats. Comment. Fresh produce cannot be stored in metal foiling. Justify.  $3 + 2$
- What is co-extrusion in making laminates ? What is thermosetting polymer ?  $3 + 2$



**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. What is aseptic packaging ? Discuss the characteristic features of aseptic packaging materials. What is tetrapack cartons ?  $5 + 5 + 5$
8. Discuss different types of filling system for liquid and dry products. With a neat sketch, outline the operations of FFS machine ( horizontal or vertical ). What are the different types of sealing used for glass bottles, for metal cans and for plastic containers ?  $5 + 5 + 5$
9. What is modified atmosphere packaging ( MAP ) ? What are the packaging films commonly used for MAP ? Is there any difference in controlled atmosphere packaging and MAP ? How are irradiated foods packed ? Differentiate between PVC and PET as packaging materials for wrapping different food items.  $5 \times 3$
10. Give a brief overview about environmental and cost considerations in selecting packaging materials. What are the characteristic features and applications of Bar codes in food packaging ?  $8 + 7$
11. Write short notes on any *three* of the following :  $3 \times 5$ 
  - a) Shrink packaging
  - b) Stress-strain curve for flexible packaging
  - c) Recycling of packaging materials
  - d) Edible packaging materials
  - e) Glass in food packaging.