



Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech(FT-New)/SEM-4/FT-402/2012

2012

PRINCIPLES OF FOOD PRESERVATION

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 any *ten* of the following :

10 × 1 = 10

- i) Woodsmoke
 - a) improve the colour of meat
 - b) tenderize the meat
 - c) both of these
 - d) none of these.
- ii) The spices have preserving action because they contain
 - a) alcohol
 - b) essential oil
 - c) formaldehyde
 - d) benzoic acid.



iii) Example of spore former is

- a) Bacillus
- b) Clostridium
- c) both of these
- d) none of these.

iv) Example of lactic acid bacteria is

- a) Leuconostoc
- b) Streptococcus
- c) both of these
- d) none of these.

v) Cold sterilization means

- a) Freezing
- b) Chilling
- c) both of these
- d) none of these.

vi) In canning

- a) growth of microorganism is stopped
- b) destruction of microorganism takes place
- c) growth of microorganism is stimulated
- d) none of these.

vii) Lactic acid bacteria is

- a) always beneficial
- b) always harmful
- c) sometimes beneficial sometimes harmful
- d) none of these.



viii) Meat and meat products can effectively be dried by using

- a) Drum drier b) Spray drier
- c) Tunnel drier d) Freeze drier.

ix) Approximate lower limit of water activity for growth of bacteria is

- a) 0.95 b) 0.85
- c) 0.65 d) 0.7.

x) Micro-organisms that can grow in extreme conditions of dryness are known as

- a) Osmotolerant b) Xerotolerant
- c) Halotolerant d) Thermoduric.

xi) The term "putrefactive" is associated with

- a) lipid breakdown
- b) Carbohydrate breakdown
- c) protein breakdown
- d) reaction of protein and sugar.



xii) The moisture content of IMF is

- a) 50% – 65%
- b) 10% – 15%
- c) 5% – 25%
- d) 20% – 50%.

xiii) The minimum concentration of sugar for effective food preservation is

- a) 55%
- b) 72%
- c) 52%
- d) 66%.

xiv) The minimum vacuum pressure for freeze drying process is

- a) 4.2 mm
- b) 2.8 mm
- c) 6.0 mm
- d) 3.9 mm.

xv) Example of biopreservative is

- a) Hydrogen peroxide
- b) Nisin
- c) Glucose
- d) Sodium sorbate.



GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

$3 \times 5 = 15$

2. What are the objectives of food preservation ? How the food materials get spoiled ? Discuss briefly. 1 + 4
3. What are the effects of reduced water activity in food preservation ?
4. Define cryoprotective agents ? Explain the effect of freezing on food preservation. $2\frac{1}{2} + 2\frac{1}{2}$
5. What do you understand by the term "Commercial sterility" ?
6. What is antibiotic ? Give two examples of it. What are the criteria for the selection of an antibiotic as food preservative ? 1 + 1 + 3
7. Differentiate between freeze dehydration and conventional drying of food materials.

GROUP - C

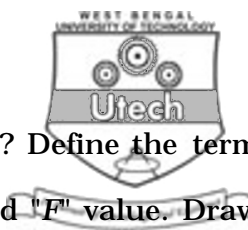
(Long Answer Type Questions)

Answer any *three* of the following.

$3 \times 15 = 45$

8. Differentiate between refrigerated storage and frozen storage. Write the factors affecting the rate of freezing of food materials. Write the flow diagram for freezing of fruits. What are the factors to be considered for cold storage of foods ? Briefly discuss about 'cold chain system'.

$3 + 3 + 2 + 4 + 3$



9. What is the principle involved in canning ? Define the term "Thermal Death Time". Define "Z" value and "F" value. Draw the relationship between *D*-value and *Z*-value. Discuss about principle in selecting lacquering compound for cans.

2 + 2 + 3 + 4 + 4

10. a) What is food irradiation ?

- b) What are the meaning of the following terms :

i) Roentgen

ii) Rad

iii) Gray.

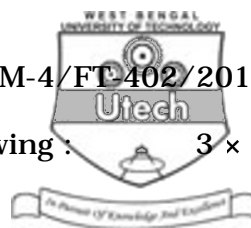
- c) Write down the negative effects of radiation of foods during preservation using food irradiation process.

- d) Discuss about different doses of radiation for food irradiation.

1 + 6 + 3 + 5

11. What are the ingredients used for curing of meat ? Briefly discuss the role of ingredients used for curing. What is the purpose of smoking ? Write down the role of nitrite and/or nitrate in cured meat colour ?

2 + 8 + 2 + 3



12. Write short notes on any *three* of the following : 3 × 5

- a) Hurdle Technology
- b) High Pressure Processing
- c) Cryogenic Freezing
- d) Cold Chain System
- e) Probiotic foods.

