

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR FIRST SEMESTER
SUPPLEMENTARY EXAM - 2018

PRINCIPLES OF FOOD PRESERVATION

Time: Three Hours

Full Marks: 100

Use Separate Answer scripts for each part

Different parts of the same question should be answered together

Part-I

Full Marks-50

Answer question 1 and any two from the rest

1. Explain the following:

4x5

- a) Filling liquid for canning of fruits and vegetables.
- b) effect of dehydration on quality of food products.
- c) dehydration of food materials by Tunnel drier
- d) major moisture transfer within the solid during dehydration.

2a). Define: critical moisture content, equilibrium moisture content, F-value, moisture ratio.

b) Discuss about Osmotic dehydration of fruits and vegetables.

6+9

3.a) What is canning? Explain the steps of canning. What is the meaning of can size of 401 x 414

b) A food product contains 20% moisture on wet basis. What will be the moisture content on dry basis?

(2+7+3)+3

4. Write short notes on: (any three)

3x5

- a) stationary and falling rate period of dehydration process.
- b) exhausting before can sealing.
- c) nutritional changes in food products due to canning.
- d) freeze drying of food material.

[Turn over

Ref. No. EX/FTBE/T/213/2018(S)

B.E (FTBE) 2ND YEAR, IST SEMESTER SUPPLEMENTARY EXAM 2018

PRINCIPLES OF FOOD PRESERVATION TIME: 3 H FULL MARKS = 100

PART- II (50 MARKS)

USE SEPARATE ANSWER SCRIPT FOR EACH PART

Answer Q5 and any Two from the rest

Q5. Answer the following (any 2):

- a. Explain graphically heat removal during freezing of foods. Why a combination of rapid freezing and slow thawing is recommended for frozen foods? **5 + 5**
- b. Explain how storage temperature of ice creams can be enhanced using maltodextrin. **10**
- c. Enumerate features of a gamma irradiation chamber used in food preservation. Explain Herschmann equation and its significance in gamma irradiation of foods. **5 + 5**

Q6. Explain why (any 3):**5 × 3 = 15**

- a. Frozen milk expands while frozen strawberries do not.
- b. There are quality differences between irradiated and non-irradiated rice.
- c. There are concerns in intake of indirect food additives.
- d. Long-term storage at -7 to -9 °C yields unacceptable frozen foods.

Q7. What is/are (any 5):**5 × 3 = 15**

- a. Factors to be considered in selecting food antimicrobial agents
- b. Radura
- c. Role of sorbic acid in cheese
- d. Freeze burn
- e. Major advantages of gamma irradiation of foods
- f. Role of acidulants in RTS beverages

Q8. Distinguish between with apposite examples (any 5):

5 × 3 = 15

- a. Humectants and Desiccants
- b. Dose and Equivalent dose of gamma radiation
- c. Plate freezing and Immersion freezing
- d. Fortification and Enrichment
- e. Nucleation and Crystal growth
- f. Flavoring agents and Flavor enhancing agents