17675

16172

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

Marks

1. Solve any FIVE : **20**

(a) Explain four basic principles of food process engineering.

(b) Explain different types of energy.

(c) What is heat exchanger ? Classify them.

(d) What is basic drying theory ?

(e) Write different factors which affect fruit and vegetable preservation in India.

(f) Classify the food according to ease of spoilage.

(g) Explain different steps involved in vinegar production.

2. Solve any TWO : **16**

(a) Explain Novel thermal processing techniques.

(b) Describe horizontal tube natural circulation evaporator.

(c) Describe different pigments which are used in food product as a colouring material.

3. Solve any TWO : **16**

(a) Describe various modern methods of fruit and vegetable preservation.

(b) Describe specific requirements for canning of fruits and vegetables.

(c) Describe different methods of freezing.

4. Solve any TWO : **16**

(a) Classify different additives used in food products.

(b) Describe different types of flavours and flavour compounds.

(c) Write advantages of acetic acid fermentation and alcoholic fermentation.

5. Solve any TWO : **16**

(a) Describe heat balance and heat balance problems involved in mixing, freezing and drying.

(b) Describe double pipe heat exchanger with neat labelled diagram.

(c) Describe the terms :

(i) Heat transfer in drying

(ii) Mass transfer in drying

6. Solve any TWO : **16**

(a) Describe different factors influencing evaporation process.

(b) Describe physical and chemical methods of fermentation.

(c) Describe concept of canning concerned with fruits and vegetables.

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