

17675

15162

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--	--	--

- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Answer any FIVE of the following:** **20**
- State the importance of food process engineering.
 - Explain causes of spoilage of canned food.
 - Explain role that government plays for fruits and vegetables preservation in India.
 - Explain with examples food spoilage caused by mechanical means.
 - Compare single effect evaporator and a multiple effect evaporator.
 - Explain principle of food preservation.
 - What is thawing? State atleast two disadvantages of thawing.

P.T.O.

- 2. Answer any FOUR of the following:** **16**
- a) What is meant by product mix? State its importance in commercial food processing.
 - b) Explain unit processes involved in size reduction or sieving.
 - c) Classify types of food spoilages according to care of spoilage.
 - d) State the principle and processing involved in canning of foods.
 - e) List various methods of freezing fruits and vegetables and mention application of each to food processed products.
 - f) Write the steps involved in vinegar manufacturing.
- 3. Answer any TWO of the following:** **16**
- a) (i) Name types of energy. 2
(ii) Explain principles of mass and energy balance. 6
 - b) Classify types of heat exchangers on the basis of:
 - (i) fluid flow arrangement and
 - (ii) transfer of heat
 - c) Describe process of:
 - (i) pasteurisation
 - (ii) microwave heating
- 4. Answer any TWO of the following:** **16**
- a) (i) Explain colour changes that take place when chlorophyll rich vegetables are cooked.
(ii) What are flavonoids? Explain their use as food colour out.
 - b) (i) Explain use of brominated vegetable oils as food additive.
(ii) Name two food additives to be used with caution and two substances prohibited as food additives.
 - c) (i) Explain meaning of developed flavour, added flavour and processed flavour.
(ii) Explain use of terpenoids as food flavour compound.

- 5. Answer any TWO of the following:** **16**
- a) (i) Explain basic theory of drying.
 - (ii) State factors on which, dryer efficiency depend.
 - b) Explain by means of a flow chart the canning process of fruit, giving a brief explanation on each step.
 - c) Describe a physical and a chemical method of food preservation.
- 6. Answer any TWO of the following:** **16**
- a) (i) State factors influencing evaporation process.
 - (ii) Compare rising film evaporator and falling film evaporator
 - b) List the different types of fermentation process, stating advantages and disadvantages of each.
 - c) (i) State the changes that take place during freezing and storing. Suggest steps that need to be taken to minimise the problems caused during freezing and storing.
 - (ii) Explain problems associated in production vinegar.
-