

17579

14115

3 Hours / 100 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: 20**
- a) What is meant by positive displacement pump? How does it works?
 - b) How are heat exchangers classified? Give its applications.
 - c) Compare single stage and two stage homogenizers.
 - d) State and explain Dalton's law of partial pressure.
 - e) State the application areas of A.C. systems?
 - f) Write the materials used for duct. Also state requirement of duct materials.
 - g) Enlist the properties of insulating material.

P.T.O.

- 2. Attempt any TWO of the following:** **16**
- a) State the weighing and measuring milk standards? Explain principles of operation of can washer.
 - b) Define pasteurization. State its purpose and special requirement. Also differentiate between batch type and continuous type pasteurizing plants.
 - c) What are the different types of conveyer used in dairy industry? What are their drives? Explain their mechanism.
- 3. Attempt any TWO of the following:** **16**
- a) Define the terms:
 - (i) Bypass factor,
 - (ii) ADP,
 - (iii) SHF, and
 - (iv) GSHF
 - b) List the equipment used for making cream, butter and ghee. State their materials. Explain maintenance process of continuous butter making equipments.
 - c) Define air conditioning. How are air conditioning systems classified? Compare central AC. system and unitary AC system.
- 4. Attempt any TWO of the following:** **16**
- a) What are the various losses occur in ducts? Explain.
 - b) What are the various types of insulating materials? Explain any one method of applying insulation.
 - c) Write the specification used for the storage tanks and positive displacement pumps. State the standards used for pipes and fittings.

5. Attempt any TWO of the following: 16

- a) Explain concept, necessity and principle of operation of evaporator.
- b) Define efficiency of homogenization. Explain the method of installation of IN floor and on floor conveyor.
- c) With the help of psychrometric chart. Find out the following if the air is at 24°C DBT and 50% relative humidity.
 - (i) Dew point temperature
 - (ii) Wet bulb temperature
 - (iii) Specific volume of air
 - (iv) Enthalpy of air

6. Attempt any FOUR of the following: 16

- a) Compare centrifugal pump and reciprocating pump.
 - b)
 - (i) Enlist the equipments used for making ice cream.
 - (ii) What are various psychrometric processors?
 - c) Explain adiabatic mixing of air streams.
 - d) What are the components of cooling load? State the factors affecting human comfort.
 - e) Draw a labelled sketch of any one pipe fitting used in sanitary.
 - f) What is effective temperature? And explain the use comfort charts.
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