



17579

15162

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) State the standards used for pipes and fittings.
- b) Write the necessity and principle of operation of evaporator.
- c) Enlist the different types of conveyors used in dairy industry and their drives.
- d) What is meant by i) Bypass-factor ii) ADP ?
- e) State meaning of adiabatic mixing of air streams.
- f) Compare central and unitary AC system (any 4 points).
- g) What are the factors affecting human comfort ? Explain in brief.

2. Attempt any two :

16

- a) Explain construction and working of centrifugal pump with neat sketch.
- b) i) How are heat exchangers classified ? State their applications.
ii) Compare batch type and continuous type pasteurizing plants.
- c) Enlist the Ghee pan and Ghee making equipments. Write the maintenance steps of continuous butter making equipment.

3. Attempt any two of the following :

16

- a) Define efficiency of homogenization. Explain single stage and two stage homogenizers.
- b) State and explain the method of installation of IN floor and ON floor conveyor.
- c) List the materials used for making ducts. What are the requirements of duct materials and explain the various losses in ducts.

P.T.O.



4. Attempt **any two** of the following :

16

- a) Explain cold milk separators. Distinguish between rotary and straight through can washer.
- b) Define pasteurization. Write the utility of high temperature short time pasteurizer and ultra high temperature pulverizer.
- c) Explain ERSHF. Draw a neat sketch showing this parameter on psychrometric chart.

5. Attempt **any two** :

16

- a) Enlist the milk receiving equipment. Explain principles of operation of can washer with neat sketch.
- b) Atmospheric air at dry bulb temperature of 35°C and relative humidity of 20% enters the cooling coil, whose surface temperature is 15°C . Air comes out of the cooling coil at a temperature of 23°C , without change in its moisture content. Find
 - i) Bypass factor of cooling coil.
 - ii) Amount of heat removed from air.
 - iii) Condition of air leaving the coil.
- c) What are the various types of insulating materials? Explain any one method of applying insulation.

6. Attempt **any four** :

16

- a) Enlist the desired properties of insulating material.
 - b) State and explain Dalton's law of partial pressure.
 - c) Explain the function of stuffing box and rotary seal.
 - d) How are AC systems classified? State application areas of AC systems.
 - e) Define sensible heat gain. Explain the use of comfort chart.
 - f) Draw and explain air distribution outlets.
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