

[Time: Three Hours]**[Marks:80]**

Please check whether you have got the right question paper.

- N.B: 1) All questions are compulsory.
2) Draw neat labelled diagrams wherever necessary.

- Q.1** a) Explain U-Tube manometer and its modification. (3)
b) Define mass transfer. Elaborate on mass transfer in Laminar flow. (3)
c) Define crystal form with example. (2)
d) Classify Evaporator. (2)
e) Explain the term HETP. (2)
f) Write a note on Ferrous and its alloys. (3)
g) Give limitation of Mier's theory of Supersaturation. (2)
h) Elaborate bucket traps as an evaporator accessory. (3)

- Q.2** a) Classify Pump. Explain any one reciprocating pump in detail. (4)
b) Discuss construction and working of Swenson Walker Crystallizer. (4)

OR

Explain design and working of Oslo Crystallizer.

- c) Discuss Centrifugal molecular distillation still. (4)

- Q.3** a) Classify flow meter. Elaborate orifice meter in detail. (4)

OR

Give the principle of variable area flow meter and explain Rotameter.

- b) Discuss construction and working of Horizontal tube evaporator. (4)

- c) Define refrigeration. Write in detail on refrigeration equipment. (4)

- Q.4** a) What is fluid dynamics? Write a note on Reynolds number. (4)

- b) What is conduction and discuss Stefan Boltzmann Law. (4)

OR

Enlist mode of heat transfer and write a note on any one tubular heat exchanger.

- c) Discuss nucleation step in crystallization. (4)

- Q.5** a) Describe principle construction and working of centrifugal pump. (4)

- b) Elaborate design and working of steam distillation. (4)

OR

Describe in detail construction and working Bubble Cap Plate column.

- c) Discuss types of fire and its prevention. (4)

- Q.6** a) Enlist types of conveyer and elaborate on Belt Conveyor. (4)

- b) Define evaporation and explain factor influencing rate of evaporation. (4)

- c) What is corrosion and discuss any two methods of prevention of corrosion. (4)

OR

Discuss mechanism and types of corrosion.
