

(3 HOURS)

[TOTAL MARKS : 80]

**N.B. 1) All questions are compulsory.****2) Draw neat and labelled diagrams wherever necessary.****Q1.**

- a). With neat and labelled diagrams differentiate between simple and differential manometer. 3M
- b). Explain laminar flow in mass transfer. 3M
- c). Classify crystallizers. 2M
- d). Enlist factors affecting rate of evaporation. 2M
- e). Writes notes on simple distillation. 2M
- f). What is plastic and explain in brief. 3M
- g). Elaborate Crystal Habit. 2M
- h). Discuss entrainment separators as evaporator accessory. 3M

**Q2.**

- a). Discuss principal, construction and working of Piston pump. 4M
- b). Elaborate design and working of agitated tank crystallizer. **OR** Vacuum crystallizer. 4M
- c). Explain construction and working of falling film molecular distillation unit. 4M

**Q3.**

- a). Explain construction and working of Pitot tube. **OR** Pressure differential flowmeter . 4M
- b). Discuss expansion traps as evaporator accessories. 4M
- c). Elaborate Brine system in refrigeration. 4M

**Q.4**

- a). Discuss an experiment to study laminar and turbulent flow in Fluids. 4M
- b). Elaborate modes of heat transfer in detail. 4M

**OR**

- b). Writes note on shell and tube heat exchanger.
- c). Explain Miers Theory of supersaturation. 4M

**Q.5**

- a). Explain design and working of centrifugal pump. 4M
- b). Elaborate on the construction and working of sieve plate column. 4M

**OR**

- b). Discuss an azeotropic distillation.
- c). Elaborate type of fire and its prevention. 4M

**Q.6**

- a) Classify conveyors and discuss construction and working of Pneumatic conveyor. 4M
- b) Elaborate on the construction and working of horizontal tube evaporator. 4M
- c). Enlist types of factors affecting corrosion and explain any three factors in detail 4M

**OR**

- c). What is corrosion and discuss two methods to prevent corrosion.