

ANNA UNIVERSITY - 2006
B.E/B.TECH IV SEMESTER DEGREE EXAMINATION
INDUSTRIAL CHEMICAL PROCESS
(ELECTRONICS AND INSTRUMENTATION ENGINEERING)

TIME-3HOUR
MARK-100

ANSWER ALL QUESTIONS

PART A (10 × 2 = 20)

1. Define unit operation.
2. Draw a diagram of pneumatic conveyor and mention its parts.
3. Differentiate between evaporator and crystallization process.
4. Draw the temperature profile along the length of a single pass heat exchanger for co-current and counter current flow.
5. Define refrigeration process.
6. What is meant by distillation process?
7. Why coke is used instead of coal in the blast furnace of an integrated steel plant?
8. Brief any two type of dry ash collecting system used in thermal power plant.
9. What is an economizer?
10. State the condition for the formation and growth of crystals in crystallization process.

PART B (5 × 16 = 80)

11. Explain in detail about Gas-Solid, Liquid-Liquid, Liquid-Solid and Solid-Solid mixing.
12. (a) Explain in detail about the different separation process for Solid from Gas, Solid from Liquid, Liquid-Liquid and Solid-Solid.
Or
(b) (i) Explain in detail about any one type of vacuum crystallizer with recirculation arrangement.
(ii) Explain in detail about forced circulation evaporator with external horizontal heating surface and agitator evaporator.
13. (a) Explain in detail about any five type of Drying process.
Or
(b) Describe the construction and the operation of a distillation column. State few applications.
14. (a) Explain the sequence of operation involved in manufacturing of steel from raw material in an integrated steel plant.
Or
(b) (i) Explain different zone and various inlet-outlet lines in a Kamyr digester.
(ii) Explain in detail the Wet end and Dry end process.
15. (a) Explain with flow chart the operation involved in the manufacturing of Leather.
Or
(b) Explain with block diagram the unit operations in a thermal power plant.