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Register Number:

7199

Name of the Candidate:

DIPLOMA EXAMINATION, 2010

(CHEMICAL PROCESS INSTRUMENTATION AND CONTROL)

(PAPER-I)

110. UNIT OPERATIONS OF CHEMICAL ENGINEERING

Dec]

[Time : 3 Hours

Maximum : 100 Marks

Answer ALL questions

(5×20=100)

UNIT-I

1. a) Describe in detail the construction and working of a centrifugal pump. (10)
b) Explain in detail the working principle of a compressor. (10)
(OR)
2. Short notes on (4×5=20)
 - a) Tube and pipe.
 - b) Fans and Blowers
 - c) Stuffing Box
 - d) Priming of pumps

UNIT-II

3. Describe in detail various types of centrifuges with neat diagrams. (20)
(OR)
4. a) Explain in detail different types of agitators used in chemical process industries. (10)
b) Describe in detail working and construction of industrial thickener. (10)

UNIT-III

5. a) Explain in detail conduction, convection and radiation. (10)
b) Discuss in detail any type of crystallizer with a neat sketch. (10)
(OR)
6. a) Describe in detail the working of long tube vertical evaporator with a neat sketch. (10)
b) Explain in detail the components of a shell and tube heat exchanger. (10)

UNIT-IV

7. a) Discuss in detail
(i) Flash distillation. (5)
(ii) Differential distillation (5)
b) Explain in detail the mixer settler extraction system with neat sketch. (10)
(OR)
8. a) Describe in detail the working and construction of an absorption tower. (10)
b) Explain in detail basket type oil seed extractor with neat sketch. (10)

UNIT-V

9. a) Describe the following
- (i) Spray dryers (5)
 - (ii) Spray ponds (5)
- b) Discuss in detail mechanical draft cooling towers. (10)
- (OR)
10. List the classifications of dryers and describe the construction and working of Rotary Dryer with a neat sketch. (10)
