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Question Paper Code	12326
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Fifth Semester

Instrumentation and Control Engineering

20ICEL503 - UNIT OPERATIONS AND CONTROL

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
|---|-------------------------------|
| 1. Infer silos and bins. | <i>2,K2,CO1</i> |
| 2. List out any two mechanical operations that you come across in everyday life. | <i>2,K2,CO1</i> |
| 3. Differentiate classifier and thickener. | <i>2,K2,CO2</i> |
| 4. Interpret the statement: Why is the centrifugal separator superior to the gravity separator? | <i>2,K2,CO2</i> |
| 5. What is Reflux ratio? | <i>2,K1,CO3</i> |
| 6. What do you mean by the term fins? | <i>2,K1,CO3</i> |
| 7. Recall the factors which affect the rate of drying. | <i>2,K1,CO4</i> |
| 8. Explain conduction process. | <i>2,K2,CO4</i> |
| 9. List the pulping methods. | <i>2,K1,CO5</i> |
| 10. Enumerate the need of an economizer. | <i>2,K2,CO5</i> |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

- | | |
|--|------------------|
| 11. a) Elaborate any one type crushers with a neat sketch. | <i>13,K2,CO1</i> |
| OR | |
| b) Describe the general characteristics of solids. | <i>13,K2,CO1</i> |
| 12. a) Summarize different types of cyclone separators. | <i>13,K2,CO2</i> |
| OR | |
| b) Paraphrase the sedimentation process with neat sketch. | <i>13,K2,CO2</i> |
| 13. a) Illustrate with neat sketch Batch Distillation process. | <i>13,K2,CO3</i> |
| OR | |
| b) Describe the concepts of kettle reboiler and Thermosyphon reboiler. | <i>13,K2,CO3</i> |

14. a) Discuss any two types of crystallizer with neat sketch. *13,K2,CO4*

OR

b) Enumerate the concept of batch dryer with a sketch. *13,K2,CO4*

15. a) Summarize the process involved in Leather manufacturing process. *13,K2,CO5*

OR

b) Paraphrase various control operations involved in the steel production industry. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the combustion process in thermal power plant. *15,K2,CO3*

OR

b) Outline different types of Condensers used in industries. *15,K2,CO3*