

19 DEC 2022 - FN

Reg. No.

Question Paper Code

11484

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Seventh Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

EI8091 - INSTRUMENTATION IN PETROCHEMICAL INDUSTRIES

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART-A (10 × 2 = 20 Marks)

Answer ALL Questions

Marks,
K-Level, CO

- | | |
|---|----------|
| 1. Describe the heat exchangers. | 2,K2,CO1 |
| 2. Illustrate the need for petroleum recovery. | 2,K2,CO1 |
| 3. List various control strategies employed in the petrochemical industry. | 2,K1,CO2 |
| 4. List the different types of cracking. | 2,K1,CO2 |
| 5. Classify Petrochemicals. | 2,K2,CO3 |
| 6. List the aromatic compound. | 2,K1,CO3 |
| 7. Describe ultrasonic analysis used in industry. | 2,K2,CO4 |
| 8. Discuss about the three types of polymerization processes used for the commercial production of PVC. | 2,K2,CO4 |
| 9. Discuss Societal Risk. | 2,K2,CO5 |
| 10. List failure modes. | 2,K1,CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

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| 11. a) Recall the different types of Enhanced Oil Recovery (EOR). | 13,K2,CO1 |
| OR | |
| b) (i) Discuss the different products that are obtained from the refining crude oil. | 6,K2,CO1 |
| (ii) What is the need for separation of oil and gases from crude oil? | 7,K2,CO1 |
| 12. a) Demonstrate any one thermal cracking method employed in refineries. | 13,K2,CO2 |
| OR | |
| b) Illustrate the control schemes used in petrochemical industries with neat sketch. | 13,K2,CO2 |

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 - Create

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13. a) Describe the overview of the Propylene Production process. 13,K2,CO3

OR

b) Summarize various Acetylene production processes. 13,K2,CO3

14. a) (i) Discuss about the polypropylene production process. 6,K2,CO4
(ii) Summarize various parameters to be measured in the Petrochemical industry. 7,K2,CO4

OR

b) Discuss the process flow sheet of BTX production. 13,K2,CO4

15. a) Discuss about Failure modes. 13,K2,CO5

OR

b) Discuss with suitable sketch hazard zone classification. 13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Discuss on the selection of various instruments vital for measurement and control in petrochemical industries. 15,K3,CO4

OR

b) Illustrate the Operation and Maintenance schemes used in the petrochemical industry. 15,K3,CO5