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Question Paper Code	13727
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M.E. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Second Semester

Industrial Safety Engineering

20PISPC202 - COMPUTER AIDED HAZARD ANALYSIS

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | Marks | K-
Level | CO |
|--|-------|-------------|-----|
| 1. List out the purpose of human error assessment. | 2 | K1 | CO1 |
| 2. Distinguish between risk assessment and risk control. | 2 | K2 | CO1 |
| 3. List the advantages of RSST. | 2 | K1 | CO2 |
| 4. How will you interpret the enthalpy of the given substance using Thermo Calorimetry test? | 2 | K2 | CO2 |
| 5. Define HAZAN. | 2 | K1 | CO3 |
| 6. Compare FTA versus ETA. | 2 | K2 | CO3 |
| 7. Write any two various source terms. | 2 | K1 | CO4 |
| 8. Summarize the importance of logics in consequences analysis. | 2 | K2 | CO4 |
| 9. What is risk assessment? | 2 | K1 | CO5 |
| 10. Summarize the various possible nuclear accident scenarios. | 2 | K2 | CO5 |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

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|---|----|----|-----|
| 11. a) How is HAZOP conducted? Explain in detail with a case study. | 13 | K2 | CO1 |
| OR | | | |
| b) Explain the factors for consideration of safety warning systems. | 13 | K2 | CO1 |
| 12. a) Utilizing DSC, how will you find the various physical properties and explain it clearly. | 13 | K2 | CO2 |
| OR | | | |
| b) What are the needs of explosive testing? Explain any one methods of explosive test. | 13 | K2 | CO2 |
| 13. a) Explain FETI module on heat radiation. | 13 | K2 | CO3 |

OR

b) What is fault tree analysis? Explain the application of logic symbols used in fault tree. 13 K2 CO3

14. a) Explain in detail about BLEVE, Pool Fire, Jet fire and flash fire with reference to industrial establishments. 13 K2 CO4

OR

b) Discuss in detail about explosion effects and confined explosion. 13 K2 CO4

15. a) Summarize the reasons for the necessity of a reactor safety study of nuclear power plant. 13 K2 CO5

OR

b) What are the reasons for industrial disasters? Briefly discuss any two major industrial disasters happened in India. 13 K2 CO5

PART - C (1× 15 = 15 Marks)

16. a) Develop a detailed methodology for safety audit in an Industry. 15 K4 CO6

OR

b) You are an authorized signatory in the process industry. Develop a detailed methodology for avoiding the risks. 15 K4 CO6