

Code No: **R204103W**

R20

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Regular/Supplementary Examinations OCT/NOV 2025

SAFETY ENGINEERING

(CIVIL, CSE, EEE, MECH)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) Explain the role of government and management in implementing industrial safety. [7M]
b) Summarize the key features of the Factories Act in relation to industrial safety. [7M]
(OR)
2. a) Explain the structure and functioning of safety committees in industries. [7M]
b) Describe the historical development of industrial safety and its impact on modern industries. [7M]

UNIT-II

3. a) Identify different types of PPE and the body parts they protect. [7M]
b) Discuss the causes, costs, and preventive measures of accidents in industrial operations. [7M]
(OR)
4. a) Explain the role of accident reporting and investigations in improving workplace safety. [7M]
b) Evaluate how industrial psychology contributes to accident prevention strategies? [7M]

UNIT-III

5. a) Analyze the significance of ergonomics in occupational health and safety? [7M]
b) Examine how occupational diseases and fatigue affect worker safety and productivity. [7M]
(OR)
6. a) Examine the engineering methods of controlling physical and chemical hazards. [7M]
b) Summarize the features of the Explosive Act, the Boiler Act, and the ESI Act. [7M]

UNIT-IV

7. a) Describe various types of fire extinguishers and their applications. [7M]
b) Compare different extinguishing agents used for A, B, C, D, and E class fires. [7M]
(OR)
8. a) Discuss the working principles of hydrants, hoses, and fire alarms. [7M]
b) Illustrate the fire triangle and explain the principle of fire extinguishing. [7M]

UNIT-V

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| 9. | a) | Describe fire resistance testing methods for building materials. | [7M] |
| | b) | Explain exit width calculations to design an egress system for a typical plant. | [7M] |
| | | (OR) | |
| 10. | a) | Evaluate the fire safety requirements for high-rise buildings? | [7M] |
| | b) | Analyze the fire safety certification process and its implications? | [7M] |
