

Code No: R204103W

**R20**

**SET - 1**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM**  
**IV B. Tech I Semester Advanced Supplementary Examinations March 2025**

**SAFETY ENGINEERING**

(CE, EEE and MECH)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**  
All Questions Carry Equal Marks

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**UNIT-I**

1. Explain the history and development of industrial safety. Discuss its importance in modern industries in detail. [14M]

(OR)

2. Discuss the role of management and the government in ensuring industrial safety. How do safety organizations contribute to workplace safety? [14M]

**UNIT-II**

3. Define Personal Protective Equipment (PPE)? Explain different types of PPE used in industries based on body parts to be protected. [14M]

(OR)

4. Discuss the causes of industrial accidents. How can education, training, and housekeeping contribute to accident prevention? [14M]

**UNIT-III**

5. Explain the key features of the Factories Act. How does it help in maintaining industrial safety and worker welfare? [14M]

(OR)

6. Discuss industrial hygiene and occupational safety. How can engineering methods control chemical hazards in industries? [14M]

**UNIT-IV**

7. Explain the fire triangle and the different classes of fire. How do fire extinguishing agents work for different types of fires? [14M]

(OR)

8. Describe various fire protection systems? How are fire alarms, hydrant pipes, and fire stations maintained for emergency response? [14M]

**UNIT-V**

9. Discuss the objectives of fire-safe building design. What are the key fire safety requirements for high-rise buildings? [14M]

(OR)

10. Explain the concept of egress design and exit width calculations. How do fire-resistant materials contribute to structural fire protection? [14M]

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