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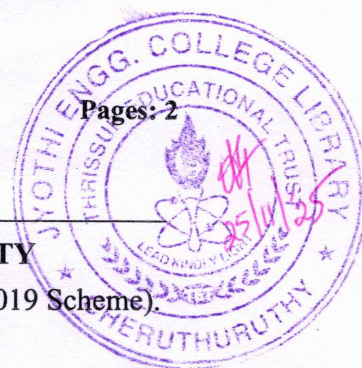
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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S7 (R,S) (FT/WP/PT) Examination November 2025 (2019 Scheme).



**Course Code: MCN401**

**Course Name: INDUSTRIAL SAFETY ENGINEERING**

**Max. Marks: 100**

**Duration: 3 Hours**

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |    |   |     |
|----|---|-----|
| 1  | Describe the following (a) Accident (b) Injury (c) Unsafe Condition | (3) |
| 2  | What is the relation between safety and productivity?               | (3) |
| 3  | Differentiate hot work and cold work permits                        | (3) |
| 4  | Name different types of PPEs.                                       | (3) |
| 5  | Why is ergonomics important?  | (3) |
| 6  | List the various safety features of ladders.                        | (3) |
| 7  | Which are the hazards associated with manual material handling?     | (3) |
| 8  | Discuss the safety issues of Gas welding operations.                | (3) |
| 9  | Define the terms hazard and risk.                                   | (3) |
| 10 | What is preliminary hazard analysis (PHA)?                          | (3) |

**PART B**

*Answer any one full question from each module, each carries 14 marks.*

**Module I**

- |    |  |      |
|----|--|------|
| 11 | a) Explain the theories of accident causation. | (14) |
|----|--|------|

**OR**

- |    |   |      |
|----|---|------|
| 12 | a) Discuss the Role of management, supervisors, workmen, unions, and government in Safety | (14) |
|----|---|------|

**Module II**

- |    |  |      |
|----|--|------|
| 13 | a) Summarize the types of foot and leg protection equipment with a brief description | (10) |
|    | b) Identify some fields where personal protection is needed with reason.             | (4)  |

**OR**

- |    |   |      |
|----|---|------|
| 14 | a) What are the advantages of good housekeeping.? Explain 5 s of housekeeping | (14) |
|----|---|------|



**Module III**

- 15 a) Describe the different safety issues in Under-water works (7)  
b) What are the safety precautions to be taken while working in tunnelling? (7)

**OR**

- 16 a) What are some of the most common confined space hazards? List the confined space safety precautions. (7)  
b) Describe Musculoskeletal disorders (MSD). What are its causes and remedies? (7)

**Module IV**

- 17 a) What are the safety issues associated with grinding and gas welding? (10)  
b) Explain the various principles used in machine guarding. (4)

**OR**

- 18 a) Illustrate the seven defects of wire ropes. (14)

**Module V**

- 19 a) Describe the different types of fire extinguishers. (14)

**OR**

- 20 a) Explain briefly the four phases in the HAZOP methodology. (14)

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