

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree 7th semester (S,FE) (FT / PT) Exam April 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	With suitable schematics explain any one theory of accident causation.	(3)
2	Explain the importance of reporting of accidents in any industry.	(3)
3	Discuss the safety features of any two PPE for head protection.	(3)
4	Discuss the importance of cold work permits referred to safety measures.	(3)
5	Explain the important safety practices in scaffolding during construction works.	(3)
6	Write a short note on the significance of IS codes for construction works with suitable example.	(3)
7	With the help of a suitable example, discuss the importance of fixed guards in machine operations.	(3)
8	Write a short note on safety during arc welding operation.	(3)
9	How the Criticality Analysis help to identify and analyse potential hazards in industrial process?	(3)
10	Explain any five characteristics of PHA referred to industrial systems.	(3)

PART B*Answer any one full question from each module, each carries 14 marks.***Module I**

- 11 a) Explain the structure and important six functions of safety committee in an organization. (9)
- b) Explain any five important roles of trade unions in safety in an organization. (5)

OR

- 12 a) Explain the relevance and important key contents in the Safety Policy for an organization. (9)
- b) Differentiate between unsafe act and unsafe conditions in an industry with suitable examples referred to material handling. (5)

Module II

- 13 a) Discuss the 5S concept of housekeeping as a basic tool to enhance the safety and quality of the workplace. (8)
- b) Classify the respiratory protective equipments (RPE). Also, explain the safety functions of any two types of RPE suitable for typical hazardous situations. (6)

OR

- 14 a) Explain any four critical hazards in confined work site. Also explain the key elements of a confined work permit. (9)
- b) Explain the role of any three measurement indicators for safety performance monitoring. (5)

Module III

- 15 a) Explain five critical hazards and associated risks during the underwater construction works. Also mention any eight important safety measures related to under water works. (9)
- b) Write a short note on musculoskeletal disorders due to ergonomics hazards. (5)

OR

- 16 a) Discuss the important ten preventive safety measures related to tunnelling works. (9)
- b) Write a short note on safety issues in demolition of huge concrete structures. (5)

Module IV

- 17 a) Differentiate between barrier guards and safe guarding devices. Also, explain the control operation of any one of the safe guarding device suitable for an industrial process. (9)
- b) Write short note on the capacity assessment and safety guidelines related to manual pulling and pushing operations for manual material handling. (5)

OR

- 18 a) Explain the key features of the maintenance requirements for clamps used for heavy material handling. (6)
- b) Explain any four critical hazards in turning process. Also list any eight safety measures to be ensured for turning operation. (8)

Module V

- 19 a) Explain the classification and basic characteristics of hazardous chemicals. (7)
- b) Explain the standard procedure for HAZOP assessment. (7)

OR

- 20 a) Write a short note on the type of fires due to electrical aspects. Also explain the operation of any two suitable fire extinguishers. (7)
- b) Discuss the important characteristics of Dow Fire and Explosion Index based safety ranking system. (7)
