

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FOURTH SEMESTER B.TECH DEGREE EXAMINATION (R), MAY 2023**(2020 SCHEME)****Course Code : 20CHT282****Course Name: Safety Engineering of Process Plants****Max. Marks : 100****Duration: 3 Hours****PART A*****(Answer all questions. Each question carries 3 marks)***

1. Define accident. List out the different types of industrial accidents.
2. Briefly explain the hot work permit system with an example.
3. Explain BLEVE.
4. Write the classification of fire with one example of each.
5. What is radiation hazard? Write two examples for radiation hazard.
6. Explain the classification of chemical hazards.
7. Define STEL and TLV.
8. What is Mock drill? Mention its significance.
9. Define risk and explain different types of risks.
10. What is Bow tie diagram?

PART B***(Answer one full question from each module, each question carries 14 marks)*****MODULE I**

11. a) Explain the fundamental safety tenets in detail. (10)
- b) Explain the major uses of MSDS. (4)

OR

12. a) Explain the Flix borough disaster with its causes and effects. (7)
- b) List out any 5 PPE's and mention its significance. (7)

MODULE II

13. Explain the flammability diagram with an example. Also write the procedure to create a flammability diagram. (14)

OR

14. a) Distinguish between pool fire and jet fire. (6)
- b) What is a fire extinguisher? Explain any two type of fire extinguishers. (8)

MODULE III

15. a) Discuss in detail about the health hazards due to chemical exposure. (8)
b) Distinguish between mechanical hazards and environmental hazards. (6)

OR

16. a) What are the precautions that has to be taken for lightning strokes? (6)
b) Explain the effects of particulate matter on health and environment. (8)

MODULE IV

17. a) Differentiate between onsite and offsite emergency plan. (7)
b) What all safety aspects that has to be considered for the transportation of hazardous chemicals through road? (7)

OR

18. a) Explain the HAZCHEM CODE with an example. (6)
b) Explain the working of a pressure relief system with a neat sketch. (8)

MODULE V

19. a) Explain the major steps involved in safety audit in a chemical industry. (7)
b) Explain the process involved in the fault tree analysis. (7)

OR

20. What is HAZOP analysis? Explain with an equipment in detail. (14)
