

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2021 - 22 Examination

Semester: 8

Date: 30/03/2022

Subject Code: 03103452

Time: 10:30 am to 01:00 pm

Subject Name: Environment Pollution Control and Safety Management

Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions -**(15)**

1. Material property responsible in causing industrial accidents:
 - a) Volatility b) Flammability c) Toxicity d) All of the above
2. Extreme cold temperature hazard:
 - a) Don't exist in chemical industries b) Don't cause industrial accidents
 - c) Can cause permanent tissue damage or even death d) None of the above
3. An example of passive protection system is:
 - a) Fire sprinkler b) Smoke detector c) Fire door d) Alarm
4. In LOPA, community response relates to _____.
 - a) Mock drills b) Storage dikes c) Basic process control d) Safety relief devices
5. HAZOP is conducted by:
 - a) a team of only safety experts b) a multidisciplinary team of experts, engineers and technicians
 - c) a team of laboratory technicians d) a team of engineers
6. Define Environmental Pollution
7. Write four important sources of air pollution.
8. _____are responsible for ozone layer depletion.
9. What do you understand by local toxicity and systematic toxicity?
10. Define cavitation.
11. Define risk
12. Define green engineering
13. What do you understand by work permit system?
14. The disease Cholera, Typhoid and Jaundice are due to pollution of
15. Incomplete burning of petrol or diesel in vehicles creates..... gas which is very poisonous

Q.2 Answer the following questions. (Attempt any three)**(15)**

- A) With respect to Bhopal gas tragedy, outline the following:
 - i. Properties of MIC responsible for the accident
 - ii. Effects of MIC release on people, property and environment
- B) What are the effects of Global warming?
- C) Explain fire and also describe the classification of fire based on the type of fuel.
- D) Describe the types of fire extinguisher and the classes of fire for which they can be used.

Q.3 A) Explain the concept of fault tree analysis (FTA) in industrial hazard management. How will you construct FTA for a flammable hydrocarbon storage area?**(07)**

- B) Discuss the following with reference to HAZOP:
 - i. Study unit and study node
 - ii. Types of guide words used in HAZOP study
 - iii. Advantages of conducting HAZOP study

(08)**OR**

- B) Explain the OHSAS 18001 certification, model and its benefits to the industry.

(08)**Q.4 A) Write the sources, types and preventive measure to control air pollution****(07)****OR**

- A) Define explosion and also describe the types of explosion

(07)

- B) Write a short note on

(08)

- a. Fire triangle
- b. Detonation & Deflagration
- c. Flash point
- d. Flammability limits