

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) EXAMINATION – WINTER 2022****Subject Code:3140509****Date:13-12-2022****Subject Name:Pollution control & safety Management****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

- Q.1**
- | | | |
|-----|--|-----------|
| (a) | Explain effects of air pollution on human health and materials. | 03 |
| (b) | Write short note on environmental audit. | 04 |
| (c) | List the techniques for hazard identification? Explain HAZOP method in detail. | 07 |

- Q.2**
- | | | |
|-----|--|-----------|
| (a) | Describe features of factory act. | 03 |
| (b) | Write short note on control of water pollution. | 04 |
| (c) | Discuss nitrogen cycle in nature with neat diagram and give its effect on environment. | 07 |

OR

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|-----|---|-----------|
| (c) | What is Safety Audit? Explain the procedure to carry out safety audit in any chemical unit. | 07 |
|-----|---|-----------|

- Q.3**
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|-----|---|-----------|
| (a) | Define safety, risk and accident. | 03 |
| (b) | What is Energy audit? Why is it important? | 04 |
| (c) | Explain Fault tree analysis method with meaning of all Symbols and GATES in detail. | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Discuss any one method for disposal of Solid wastes from Chemical Process Industry. | 03 |
| (b) | What is Fire Triangle? Discuss inerting as a method of preventing Fire. | 04 |
| (c) | Discuss various equipments used to separate the particulate matters from the effluent gases to avoid air pollution. | 07 |

- Q.4**
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|-----|---|-----------|
| (a) | Explain industrial hygiene. | 03 |
| (b) | Explain source model of flow of liquids through pipes. | 04 |
| (c) | Discuss Off –site and On-site emergency planning with its importance. | 07 |

OR

- Q.4**
- | | | |
|-----|---|-----------|
| (a) | Explain Material Safety Data Sheet (MSDS). | 03 |
| (b) | Explain working principle and industrial applications of Rupture disc. | 04 |
| (c) | Discuss different types of Safety Permit. Discuss its content and validity. | 07 |

- Q.5**
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|-----|--|-----------|
| (a) | Explain management and disposal of hazardous waste. | 03 |
| (b) | What are the various health provisions mentioned in factories act, 1948? | 04 |
| (c) | Explain the following terms as per Industrial Dispute Act: a) Wages b) Industry c) Employer. | 07 |

OR

- Q.5**
- | | | |
|-----|-------------------------------------|-----------|
| (a) | Define Cleaner Production. | 03 |
| (b) | Enlist the benefits of CP. | 04 |
| (c) | Explain six step methodology of CP. | 07 |
