

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (New) EXAMINATION – WINTER 2019****Subject Code: 2160504****Date: 09/12/2019****Subject Name: Pollution Control, Safety & Health Management****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full 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**
- (c) What is Safety Audit? Explain the procedure to carry out safety audit in any chemical unit. **07**
- Q.3** (a) Explain industrial hygiene. **03**
 (b) Explain source model of flow of liquids through pipes. **04**
 (c) Discuss Pluff and Plume Model for dispersion. How it is useful in case of Toxic release? **07**
- OR**
- Q.3** (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**
- Q.4** (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**
- OR**
- Q.4** (a) Explain Material Safety Data Sheet (MSDS). **03**
 (b) Write a note on detonation and deflagration. **04**
 (c) Discuss Off –site and On-site emergency planning with its importance. **07**
- Q.5** (a) Write short note on IBR Act. **03**
 (b) Discuss carbon cycle with sketch. **04**
 (c) Explain the following terms as per Industrial Dispute Act: **07**
 a) Wages b) Industry c) Employer
- OR**
- Q.5** (a) Explain management and disposal of hazardous waste. **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**
