

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- SEMESTER-IV (NEW) EXAMINATION – WINTER 2020****Subject Code:3140509****Date:09/02/2021****Subject Name:Pollution control & safety Management****Time:02:30 PM TO 04:30 PM****Total Marks:56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		<b>MARKS</b>
<b>Q.1</b>	(a) Define the following terms in the context of Safe Industrial Practices: (1) Accident (2) Likelihood (3) Scenario	<b>03</b>
	(b) Discuss the role of government and voluntary organizations in controlling pollution to protect the environment.	<b>04</b>
	(c) Explain the importance of Pollution Control & Safety management in Chemical Industries.	<b>07</b>
<b>Q.2</b>	(a) Briefly explain Detonation and Deflagration.	<b>03</b>
	(b) Write difference between MF, UF, NF and RO membrane used for waste water treatment.	<b>04</b>
	(c) Explain with neat sketch the design steps of Gravity Settling chambers	<b>07</b>
<b>Q.3</b>	(a) Briefly explain the ingredients of successful safety program.	<b>03</b>
	(b) State and discuss briefly about the welfare provisions in factories act,	<b>04</b>
	(c) Stating the various classes of fire with examples, discuss about the fire extinguishing agents used in fire extinguisher.	<b>07</b>
<b>Q.4</b>	(a) Define the term: (1) PM <sub>2.5</sub> (2)Aeration (3) MLVSS	<b>03</b>
	(b) What is DOW Index? Give its importance in chemical industries.	<b>04</b>
	(c) What is Risk assessment? Explain the Fault tree analysis technique in detail, with meanings of different symbols used in it.	<b>07</b>
<b>Q.5</b>	(a) Explain fire triangle in detail.	<b>03</b>
	(b) What is Energy audit? Why it is important?	<b>04</b>
	(c) Enlist the techniques used for hazard identification. Explain HAZOP method in detail.	<b>07</b>
<b>Q.6</b>	(a) Differentiate the term BOD and COD with its significance.	<b>03</b>
	(b) Discuss 'Landfill method' for hazardous solid waste disposal	<b>04</b>
	(c) State the various pressure relief devices. Explain any two with neat sketch.	<b>07</b>
<b>Q.7</b>	(a) Briefly explain the various Cleaner production practices adopted by chemical industries.	<b>03</b>
	(b) What is the aim of payment and wages act? Explain how it safeguards the interest of the workers.	<b>04</b>
	(c) Write a short note on 'industrial electricity act and rules'.	<b>07</b>

- Q.8**
- (a) What are the various types of solid wastes? Explain the various methods of solid waste collection. **03**
  - (b) State and explain the factors to be considered while doing Environment impact assessment (EIA). **04**
  - (c) Explain Cleaner production (CP) Vs End of pipe approach in Chemical industry. **07**

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