

Reg. No.


**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**

A Constituent Institution of Manipal University

**VII SEMESTER B.TECH. (CHEM.ENGG)**  
**END SEMESTER EXAMINATIONS, NOV 2022**

**SUBJECT: Risk and safety Management in Process Industries**  
**[CHE 4071]**

**REVISED CREDIT SYSTEM**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

<b>1A.</b>	Explain the system safety process with a flow chart	<b>4</b>
<b>1B.</b>	What is a fault tree analysis? How is it accomplished in the process industries?	<b>3</b>
<b>1C.</b>	Explain the procedure to be followed in an emergency fire.	<b>3</b>
<b>2A.</b>	Discuss any 3 types of mechanical respirators as classified by MSHA and NIOSH.	<b>3</b>
<b>2B.</b>	Discuss hazard triangle with an example	<b>4</b>
<b>2C.</b>	Explain HCF (Hazard Causal factor) model with a diagram.	<b>3</b>
<b>3A.</b>	List the application areas of quantitative risk assessment and elucidate the frequency-consequence relationship	<b>4</b>
<b>3B.</b>	Discuss the fuel-air mixtures and flash point relationship from a hazard control perspective.	<b>3</b>
<b>3C.</b>	Explain the hazards associated with high pressure and compressed gases	<b>3</b>
<b>4A.</b>	Discuss the risk assessment of Bhopal gas tragedy	<b>3</b>
<b>4B.</b>	The organization's director of safety performs a number of significant tasks. Discuss any eight such tasks.	<b>4</b>
<b>4C.</b>	Discuss the safety measures that had to be implemented in Seveso disaster.	<b>3</b>
<b>5A.</b>	What, briefly, is the William- Steiger Act?	<b>3</b>
<b>5B.</b>	What are the four steps of Industrial safety efforts that have been referred to as the people safety program?	<b>3</b>
<b>5C.</b>	Safety in industry today is largely a matter of complying with government regulation. Justify the statement	<b>4</b>