Reg. No.												

Question Paper Code	13743

M.E - DEGREE EXAMINATIONS, APRIL / MAY 2025

Second Semester

Industrial Safety Engineering

24PISPC202 - COMPUTER AIDED HAZARD ANALYSIS

Regulations - 2024

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Compare voluntary and involuntary risk.	2	K1	CO1
2.	Identify the steps involved in preliminary hazard analysis.	2	K2	CO1
3.	List the advantages of RSST.	2	K2	CO2
4.	How will you interpret the enthalpy of the given substance using Thermo Calorimetry test?	2	K2	CO2
5.	Mention the softwares available for risk analysis.	2	K1	CO3
6.	Recommend the precautions to be taken to avoid fire explosion.	2	K2	CO3
7.	Write short note on hazard identification.	2	K2	CO4
8.	Differentiate between the pool fire and jet fire.	2	K2	CO4
9.	Identify few major industrial disasters which have made an international impact in safety legislations.	2	K1	CO5
10.	List out the impact of Bhopal accident incident.	2	K2	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	How is HAZOP conducted? Explain in detail with a case study.	13	K2	CO1
		OR			
	b)	Illustrate the procedure of Preliminary Hazard Analysis (PHA) with a case example.	13	K2	CO1
12.	a)	Examine the procedures of Thermo Gravimetric Analyser (TGA)? Narrate the working principle of TGA, draw a typical TGA curve and interpret it in detail.	13	K2	CO2
		OR			
	b)	Explain in detail about Reaction System Screening Tool (RSST).	13	K2	CO2
13.	a)	What is meant by FMEA? Explain its types. Also explain in detail the steps.	13	K2	CO3

OR

	b)	What is fault tree analysis? Explain the logic symbols used in fault tree.	*13*	*K2*	*CO3*
14.	a)	Explain the procedure for hazard identification based on properties of chemicals.	*13*	*K2*	*CO4*
		OR			
	b)	Explain UVCE and flash fire with example. Also Mention its advantages in safety Industries.	*13*	*K2*	*CO4*
15.	a)	How can the past accident analysis act as an information source for hazard and consequence analysis. Explain with case studies.	*13*	*K2*	*CO5*
		OR			
	b)	Summarize the reasons for the necessity of a reactor safety study of nuclear power plant.	*13*	*K2*	*CO5*

PART - C (1× 15 = 15 Marks)

16.	a)	Formulate a consequence analysis of BLEVE, pool fire and jet fire.	*15*	*K4*	*CO6*
		OR			
	b)	Analyze the sequence of events leading to the Mexico disaster and assess how a proper risk assessment could have prevented it.	*15*	*K4*	*CO6*