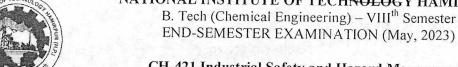


NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR





CH-421 Industrial Safety and Hazard Management

Duration: 3 Hrs.

Max. Marks: 50

Note:

- Attempt all questions
- Wherever necessary, draw neat diagram, assume data if required
- Assign proper and correct number for each answer in the answer sheet.

No.	Questions							Marks	COs
1.	Explain the different types of portable fire extinguishers in detail with neat sketch.						8M	COI	
2.	Define LFL and UFL. Draw the flammability diagram for Ethylene (C ₂ H ₄). (Use normal graph paper) Given Data: LFL and UFL of C ₂ H ₄ in Air, LFL = 2.7, UFL = 36 LFL and UFL of C ₂ H ₄ in Pure Oxygen, LFL = 3, UFL = 80							8M	COI
3.	Define HIRA. Make HIRA report for the reaction is carried out between Ketone suspended in Diethylene glycol and 80% solution of Hydrazine hydrate at temperature of 200°C and atmospheric pressure to produce cyclic compound. (Diethylene Glycol LD ₅₀ –1200mg/kg, KOH LD ₅₀ –273mg/kg, Hydrazine Hydrate LD ₅₀ –60mg/kg)						8M	CO4	
4.	Determine the mixture TLV at 25 °C and 1 atm pressure of a mixture derive from following liquid:						8M	CO2	
			Component	A	В	T 6			
			Heptane	6.89677	1264.90	C 216.54			
			Toluene	6.95464	1344.8	219.48			
				Mole percent					
		Compoi	nent	Mole percer	nt	Species TLV	(ppm)		
		Hepta		Mole percer	nt		(ppm)		
5.	Seventy five The respon	Hepta Tolue e people are	ne ne tested for s	50 50 kin irritation	because of	400 20 f a specific of	lose of a substance	8M	CO2
5.	The respondindicating I the following (i) (ii)	Hepta Tolue /e people are ses are reconnigh response ng table: Determine the	ne e tested for some. The number of the mean and Sogram of the number of the normal dist	50 50 kin irritation ale from 0 to r of individua Standard devia number of ind ribution funct	because of 10, with Is exhibiting ation dividuals a	400 20 f a specific of indicating a specific ffected verse.		8M	CO2
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ó	Explain in detail the Bhopal gas disaster.	5M	CO			
	Identify the different scenarios of hazards from the given picture and categorise them into the					
	types of hazards.		CO:			
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