Nirma University

Institute of Technology

Semester End Examination (RPR), May - 2023

B. Tech. in Electrical Engineering, Semester-VII

2CHOE26 Introduction to Fire and Safety Engineering

Roll No.		Supervisor's initial with date	

Time: 3 Hours **Max. Marks: 100**

Instructions:
1. Attempt all questions.
2. Figures to right indicate full marks.
3. Assume necessary data where needed.
4. Draw neat sketches wherever necessary.
5. Use of datasheet is allowed.
6. Assume suitable data, if necessary.

Section I

Q.1 **Answer the followings:** **(25) CO2**

A. Enlist the different types of fire extinguishers. Explain any three. **(15) BL3**

B. What are the fire alarm and fire detectors? How would you classify detectors as passive or active fire prevention methods? Clarify your response with some examples. **(10) BL3**

Q.2 What is flammability limit and flammable range? Distinguish between upper and lower flammability limit with necessary diagram? **(15) CO1 BL3**

OR

Q.2 Elaborate on lower and upper flammability limits and flammable range meanings with a suitable diagram. **(15) CO1 BL3**

Q.3 "Each fire misfortune is crushing, yet there are many times huge secret harms that insurance agency neglect." Elaborate the statement with an example of an iceberg. **(10) CO1 BL3**

Section II

Q.4 **Answer the followings:** **(20)**

A. Examine the process of igniting and burning the matchstick with the fire engineering aspect. **(05) CO1 BL5**

B. In your capacity as a fire investigator, define an accelerant. Identify the several ways that the usage of accelerants at a fire site might be proven. **(15) CO3 BL5**

Q.5	**Answer the followings:**	**(15)**	**CO2**
A.	What would happen if a foam-making branch intended for 3% foam compound was used? What would happen if the opposite was done?	**(07)**	**BL5**
B.	What kind of foam would be suitable for use in a blend of fuel and ethanol? What would happen to this blend if foam designed for non-polar fuels was used?	**(08)**	**BL5**
Q.6	**Answer the followings:**	**(15)**	**CO4**
A.	In a two-story palladium mall, the sprinkler system is fixed in every department. Sprinklers failed to put out the fire, according to tests of the fire prevention system. To analyse the fault tree and identify the underlying cause as an engineer.	**(10)**	**BL6**
	OR		
A.	Write about event tree and fault tree analysis methods. Show the difference and similarities between both.	**(10)**	**BL6**
B.	In a fire insurance policy, what do the terms "extension" and "exclusion" mean? Use examples from the typical fire insurance policy available in India to support your position.	**(05)**	**BL4**

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