

Name:		 UPES <small>UNIVERSITY OF TOMORROW</small>	
Enrolment No:			
UPES			
End Semester Examination, December 2023			
Course: Fire Risk Assessment & Planning		Semester : III	
Program: M Tech- HSE		Time : 03 hrs.	
Course Code: HSFS8028		Max. Marks: 100	
Instructions: Attempt all questions			
SECTION A (5Qx4M= 20 Marks)			
Sr. No.	Questions	Marks	CO
Q 1	Enlist the common methods used for smoke control in buildings.	4	CO1
Q 2	Highlight the objective of fire investigation at the workplace.	4	CO1
Q 3	Write short notes on the densities of stream of people during the evacuation process.	4	CO1
Q 4	For a 6-storey building, if the width of staircases is 1.25m, calculate the occupant serving capacity of the stairs.	4	CO3
Q 5	Discuss two types of fire models commonly used in the industry	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Discuss the factors that influence the efficiency of evacuation routes in a large stadium. How can the layout of exits be optimized to minimize evacuation time during a mass gathering.	10	CO2
Q 7	Explain the mechanism of stairwell pressurization and its role in preventing smoke ingress. OR Evaluate the potential challenges in implementing effective smoke management in a high-rise office building.	10	CO3
Q 8	Explain the motivations behind arson and its potential impact on life and property.	10	CO2
Q 9	Assess the challenges associated with implementing smoke vents in high-rise buildings.	10	CO3
SECTION-C(2Qx20M=40 Marks)			
Q 10	Develop an inspection checklist for assessing the fire safety condition and compliances of a building with the following details: Height: 16 mtr, Storey: 5, No of Occupants: 450, One side open, One side lake, Two sides buildings, Front road of 30 ft.	20	CO5
Q 11	Design a scenario-based case study illustrating the step-by-step process of conducting a Fire Risk Assessment for a hotel. OR Develop a comprehensive Fire Safety Audit protocol for a shopping mall, considering both structural and operational aspects.	20	CO4