Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2019

Course: Fire Engineering-I Program: B. Tech-FSE

Semester: III

Time: 3 hrs. Max. Marks: 100

Course Code: HSFS 2010

Instructions: 1. Standards IS 2190 and NBC 2016 (part-4) shall be provided to the students.

SECTION A					
S. No.	Answer all the questions	20 Marks	Mapped CO		
Q 1	Expand the following:				
	a. FFFP				
	b. MAP	4	CO1		
	c. PFPS				
	d. AFPS				
Q 2	Differentiate between "Boil Over" and "Slop Over"	4	CO 5		
Q 3	Name various extinguishing agents and enlist their effect on fire	4	CO 1		
Q 4	Define "Explosion". Brief about the classification of explosions.	4	CO 5		
Q 5	Explain the meaning of the following name plate details of portable fire				
	extinguishers.	4	002		
	i. 9A:21B:C	4	CO 3		
	ii. 2A: 13B				
	SECTION B				
S. No	Answer all the following:	40	Mapped		
		Marks	CO		
Q 6	Define Foam. Discuss the action of foam on fire and list various types of foam agents used in fire service along with their applications and limitations.	2+3+5	CO1		
Q 7	Discuss about stages of fire occurring in controlled environment. Also, name the suitable detector for each stage.	2 + 8	CO 2		
Q 8	Expand and define VCE. Explain the causes and phenomenon (sequence of events) of occurrence of VCE in case of BP Texas refinery explosion, 2005.	1+1+8	CO 5		
Q 9	Discuss the procedure to decide the extent of fire proofing. Also, mention the	8+2	CO 4		
*	national/international standards/codes of reference.				
	(OR)				
	Discuss the classification of HC storage tanks and mention code of reference.				
	Also, with neat sketches explain the foam protection system to be installed in				
	storage tanks containing flammable liquids as per OISD.	4+6	CO4		
S No	SECTION-C	40	Monned		
S. No	Answer the following	40 Marks	Mapped CO		
0.10	Expand and define BLEVE. Explain the causes, process of occurrence and aftermath	1+2+4+			
Q 10	I Expand and define BLEVE Explain the calleet process of occurrence and attermate		CO 6		

Q 11	Decide the number of fire extinguishers as per standard/code and number and type	8+12	CO 3,
	of hydrants to be installed per floor in a school building of floor dimension		CO 4
	(rectangular block shape) 90' X 15' X 20' (L X W X H) with two entrances/exits		
	along the short edges having ground + two floors with same length and width but		
	height decreases by 5' in each stage. Ground floor has office room, staff room and		
	laboratory facilities. Rest all are dedicated for class rooms.		
	OR		
	With neat sketches describe various types of fire sprinkler systems used in fire	16+4	CO 4
	service along with applications and limitations.		