

Name:	 UPES <small>UNIVERSITY WITH A PURPOSE</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES Supplementary Examination, December 2020	
Course: Fire Engineering-I Program: B. Tech-FSE Course Code: HSFS 2010	Semester: III Time : 3 hrs. Max. Marks: 100

Instructions:

SECTION A

S. No.	Answer all the questions	30 Marks	Mapped CO
Q 1	List and brief the elements of life cycle theory of fire causation.	6	CO1
Q 2	Differentiate between “Jet Fire” and “Pool Fire”	6	CO1
Q 3	Brief about classification of heat detectors.	6	CO2
Q 4	Expand the following: a. AFFF b. DAP c. VCE d. PFPS e. RSFPS f. AFPS	6	CO3
Q 5	List the steps in operation of an extinguisher	6	CO 4

SECTION B

S. No	Answer all the following:	50 Marks	Mapped CO
Q 6	Discuss the action of Foam and CO ₂ on fire and list various types of foam agents	2+2+6	CO1
Q 7	Compartmentation is the process of segregating various areas in built spaces (buildings) with fire resistant materials. Doing so leads to limit the extent of fire to an area and prevents the fast escalation. However, if conditions are favorable this may lead to local overheating and fire may go out of control. Explain the stages of compartmental fire growth with necessary sketches and list the associated fire detectors.	2 + 8	CO 2
Q 8	Discuss the procedure to decide the extent of fire proofing. Also, mention the national/international standards/codes of reference.	8+2	CO 3
Q 9	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	CO3

Q 10	Describe the following regarding BP Texas refinery accident, 2005. a. Date, time and place of Incident b. Causes of incident c. Sequence of events d. Aftermath	10	CO5
SECTION-C			
S. No	Answer the following	20 Marks	Mapped CO
Q 11	Explain the specifications of Pre-action and Deluge type sprinkler system with necessary sketches, applications and restoration procedures. (OR) With neat sketches describe total flooding system of CO ₂ and DCP along with applications and limitations.	8+12 20	CO 3