Name: **Enrolment No:**	

UPES

End Semester Examination, May 2024

Course: Safety in Construction **Semester: VI**
Program: B Tech- Fire & Safety Engineering **Time: 03 hrs.**
Course Code: HSFS3005 **Max. Marks: 100**

Instructions: Attempt all the questions.

SECTION A
(5Qx4M=20Marks)

S. No.	Questions	Marks	CO
Q 1	Explain the challenges of "Tandem Lifting".	**4**	**CO1**
Q 2	Enlist the accessories used during the blasting operation.	**4**	**CO1**
Q 3	Name different types of ladders used in construction work activities.	**4**	**CO1**
Q 4	Emphasize the legal laws and their need for confined space.	**4**	**CO2**
Q 5	Write short notes on the "competencies of the operator" of heavy machinery deployed in the execution of construction work.	**4**	**CO1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Justify with an example the need for a permit-to-work system at construction work sites and enlist the types of permit-to-work used in the construction industry. **OR** Select suitable control measures for the excavation with the following details: Dimension: 20m Deep x 10m Wide, Location: Adjacent to a Canal, Shift: Night shift, Excavation type: Top to bottom	**10**	**CO4**
Q 7	Being a safety in charge of your location, examine the pre-requisite condition of workers to be deployed for work at height activities.	**10**	**CO3**
Q 8	With the help of technological and psychological aspects of safety, solve the complexities of underground tunnel activities to minimize accidents and increase work efficacy.	**10**	**CO2**
Q 9	Defend the need to facilitate workers in construction sectors in a step towards maintaining a positive safety culture at the site.	**10**	**CO4**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	A. A lifting activity is planned for the erection of girders for an upcoming bridge in the middle of the live road. Looking at worksite challenges and vulnerability, develop a lifting plan with the following details:		

	(i) Maximum Load to be used: 250 MT (ii) More than one crane to be used at a time to lift the girder (iii) This work is to be done for more than a month. OR B. Create a method statement for the lifting work to be done when the usage of more than one crane is to be used for a month and the lifting activities are to be done across the road and in uneven ground conditions.	**20**	**CO5**
Q 11	Discuss in detail the challenges of work-at-height activities and the safety procedures to be adopted in minimizing work-at-height incidents.	**20**	**CO2**