Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020

Course: Chemical Process & Plant Safety **Semester: 8**
Program: BTech (CE+RP) **Time 03 hrs.**
Course Code: CHEG324 **Max. Marks: 100**

Instructions:

1. **The exam is closed book and closed notes**
2. **Use of mobile phone and other electronic equipment is strictly prohibited**
3. **Use of unfair means during exam will be severely dealt with.**

SECTION A

S. No.		Marks	CO
Q 1	OSHA stands for _____. (full form)	**5**	**CO1**
Q 2	A toxicant which causes chromosome damage is called a _____.	**5**	**CO2**
Q 3	Choose the right answer: In absence of friction, flow of gases through pipes is: a) Isentropic b) Isenthalpic c) Isothermal d) Isobaric	**5**	**CO4**
Q 4	Choose the right answer: Why is a toxic release model important? a) Determining the rate of release of material b) Determining the chemical composition of the material released c) Determining the toxicity of the release material d) Determining the dispersion of the material in the atmosphere	**5**	**CO5**
Q 5	Buoyancy and momentum of the release material from a source affects the dispersion of contaminant in the atmosphere by changing the _____.	**5**	**CO5**
Q 6	The maximum pressure of a shock wave is called _____.	**5**	**CO6**

SECTION B

Q 7	Determine the mixture TLV at 25 degrees Celsius of a gaseous heptane-toluene mixture derived from a liquid consisting of 20% heptane by volume. The individual species TLV of heptane and toluene are 400 and 20 ppm respectively. The vapor pressure of heptane and toluene are 46.4 and 28.2 mm Hg respectively.	**10**	**CO3**
Q 8	Write down the step-wise procedure for calculating the mass flux of gas/vapor through a pipe for the adiabatic case.	**10**	**CO4**
Q 9	Describe briefly the Pasquill-Gifford model. How is it different from the eddy diffusivity model?	**10**	**CO5**

Q 10	Describe how you would draw the flammability diagram of a gaseous substance given the LOC and the flammability limits in air and oxygen.	**10**	**CO6**
Q 11	Briefly describe the difference between a detonation and a deflagration.	**10**	**CO6**
SECTION C			
Q 12	Describe, in detail, the different steps of the consequence modeling approach. (in words)	**20**	**CO4, CO5, CO6**