

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

Online End Semester Examination, December , 2020

Course: Chemical Process and Plant Safety

Semester: VII

Program: B.Tech(Chemical Engineering with spl. in Refining and Petrochemicals)

Time: 3 hours.

Course Code: CHCE3015P

Max. Marks: 100

Instructions:

Section A

1. Each Question will carry 5 marks.

2. Instruction: Complete the statement/Select the correct answer.

S. No.		Marks	CO
Q 1	A. Inherent safety implies: a) Minimize b) Moderate c) Simplify d) All of the above.(2) B. What do you mean by risk analysis?(3)	5	CO3
Q 2	A. Risk is a measure of a) Human injury. b) Environmental damage c) Economic loss d) All of the above.(2) B. What do you mean by Process Hazard Analysis?(3)	5	CO4
Q 3	Prevention program is a part of a) Process Safety Management. b) Risk Management Plan. c) Process Hazard Analysis. d) Fault Tree Analysis.	5	CO3
Q 4	A. The concept of how toxicants enter biological organisms is a) The science of industrial hygiene. b) The science of toxicology. c) The science of Process Hazard Analysis	5	CO2

	d) The science of risk assessment.(2) B. Discuss different types of hazards.(3)		
Q 5	Accident involves a) Injury b) Death c) Property damage d) All of the above.	5	CO1
Q6	A. Source models are a part of a) Hazard Analysis b) Consequence modeling procedure. c) Risk Management Plan d) Process Safety Management(2) B. What do you mean by Risk Management Plan?(3)	5	CO3
	Section B: 1. Each question will carry 10 marks. 2. Instruction: Write short/brief notes.		
Q7	Describe fires and explosions.	10	CO1
Q8	Discuss in details consequence analysis.	10	CO1
Q9	Discuss and describe the science of industrial hygiene.	10	CO2
Q10	What do you mean by hazards identification ? Discuss in details.	10	CO3
Q11	Discuss and describe in details how toxicants enter biological organisms.	10	CO2
	Section C: Each question carries 20 marks. Instruction- Write long answer.		
Q12	Please evaluate what you think from the following case study. After carrying out a chemical blending operation, a worker felt severe pain in the fingers of his left hand. As the pain did not subside, he was sent to the hospital for treatment and was warded for one day. He was also given a total of 16 days of medical leave. The blending operation involved a highly corrosive substance, hydrofluoric acid(HF). The worker removed his impervious gloves during the blending operation as he thought that the cotton gloves would provide sufficient protection. What are the recommendations and what are the learning points? OR Discuss OSHA's Right of Enforcement.	20	CO2

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