

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**Online End Semester Examination, May , 2021**

**Course: Chemical Process and Plant Safety**

**Semester: VIII**

**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.**

**Answer all the questions (Section-A)**

S. No.		Marks	CO
Q 1	A) Select the correct answer:  Limiting the potential damage from fires and explosions involve  a) inerting b) static electricity. c) ventilation d) All of the above.(2)  B) Define OSHA-PEL.(3)	5	CO3
Q 2	A)Fire protection for chemical plants involve:  a) Anti freeze sprinkler systems. b) Deluge sprinkler system. c) Dry pipe sprinkler system. d) All of the above.(2)  B) What do you mean by preliminary hazard analysis?(3)	5	CO4
Q 3	A. Pressure relief systems are required for the following reasons: a) To protect personnel from the dangers of over-pressurizing equipment.	5	CO4

	b) To minimize chemical losses. c) To prevent damage to equipment. d) All of the above.(2) B. What do you mean by consequence modeling procedure?(3)		
Q 4	A. The Bhopal disaster occurred in the year a) 1981 b) 1984 c) 1990 d) 2001 (2) B. What do you mean by risk assessment and risk analysis?(3)	5	CO2
Q 5	A. The Flixborough, UK industrial disaster occurred in a)1974 b) 1980 c) 1987 d)1984 (2) B. Define HAZAN and HAZOP?(3)	5	CO1
Q6	A. The source model provides description of: a) Rate of discharge. b) Total quantity discharged. c) The state of discharge. d) All of the above.(2) B. Describe and discuss release mitigation.(3)	5	CO4
	<b>Section B:</b>  <b>1. Each question will carry 10 marks.</b> <b>2. Instruction: Write short/brief notes.</b>		
Q7	Discuss in details source model.	10	CO2
Q8	Discuss in details designs to prevent fires and explosions.	10	CO3
Q9	Describe and discuss different types of reliefs.	10	CO2
Q10	Discuss in details hazard identification.	10	CO3
Q11	Discuss in details Event Tree and Fault Tree analysis.	10	CO3
	<b>Section C:</b>  <b>Each question carries 20 marks.</b> <b>Instruction- Write long answer.</b>		
Q12	Discuss in details BLEVE and VCE. (20) OR Discuss in details QRA and LOPA.(20)	20	CO4