


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: Electrical Safety Program: M.Tech. – HSE Course Code: HSFS 7014		Semester : I Time : 03 hrs. Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Briefly explain Grounding and how does it protect from electrical accident.	4	CO3
Q 2	Expand the following abbreviation of Standards and safety organizations: <ul style="list-style-type: none"> • NFPA • NEMA • ANSI • ASTM 	4	CO3
Q 3	Briefly explain the term “Interrupting Rating” related to fuse and circuit breaker.	4	CO4
Q 4	List various insulation used for Rotating Machineries.	4	CO3
Q 5	Mention preventive and protection measures to prevent static accumulation.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 1	State three main objectives of Earthing and discuss general guideline for same.	10	CO4
Q 2	List and explain common electrical hazards found on construction sites.	10	CO2
Q 3	Describe Current type Earth leakage circuit breaker with the help of diagram.	10	CO4
Q 4	Classify hazardous area according to “IEC 60079-10-part-1, IS 5572:2009, NEC chapter V: zonal classification” and give few examples in each zone category.	10	CO2

SECTION-C
(2Qx20M=40 Marks)

Q 1	<p>Discuss in detail the IEEE 1584 outlines 9 steps necessary to properly perform an Arc-Flash hazard that simplify the calculation of incident energy and flash-protection boundaries calculation.</p> <p style="text-align: center;">OR</p> <p>Discuss in brief the protective clauses laid with respect to</p> <ol style="list-style-type: none">a. Protection of railways, aerodromes, and canals, docks, wharfs and pierb. Protection of telegraphic, telephonic and electric signaling linesc. Notice of accidents and inquiriesd. Prohibition of connection with earth and power for Government to interfere in certain cases of default	20	CO5
Q 2	Correctly preparing the equipment and insulation testing is crucial to our safety and the well-being of our wiring and machinery. Explain in detail the step by step process to adhere before every insulation test.	20	CO1