


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: M Tech Program: HSE Course Code: HSFS 8027 (Sustainable Technology and Industries)		Semester: III Time : 03 hrs. Max. Marks: 100	
Instructions: All questions are compulsory.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	a. The SDGs are the world's to-do list for all nations by 20 ... b. How many SD Goals are there ... c. SD Goal 3 refers to ... d. "Clean water and sanitation" is the SD Goal number	4 (one marks each questions)	CO1
Q 2	What are the 5 stages of a life cycle analysis? Explain with an example.	4	CO1
Q 3	Why is the environmental dimension so important to the world?	4	CO1
Q 4	"Limit your activities is the mantra for sustainable development". What is your view point on this statement?	4	CO4
Q 5	What was your contribution in UPES Sustainability Fair 2022? Pl also share your key learnings.	2+2=4	CO4
SECTION B (4Qx10M= 40 Marks)			
Q 6	Explain Industry 4.0 implications for sustainable development in terms of circular economy.	10	CO2
Q 7	Compare the carbon footprint of rural households and urban households.	10	CO1
Q 8	Our prime minister Mr Modi has launched Mission LiFE , what are the aim and objectives of this mission, how it will help to achieve SD Goals.	10	CO3
Q 9	What is sustainable livelihood? Explain different models of sustainable livelihood with examples?	10	CO3

SECTION-C (2Qx20M=40 Marks)			
Q 10	Please do a Life Cycle Analysis (LCA) for household refrigerators.	10	CO2
Q 11	<p>We have identified and studied following topics based on the need and requirement for Global Sustainable Development Goals. You need to choose two topics, one from each category.</p> <p>Your answer should cover following points –</p> <ol style="list-style-type: none"> a. Brief introduction b. Objectives c. Working methodology to achieve objectives d. Interpret, critique, remarks and conclusion. <p style="text-align: center;"><u>Category - A</u></p> <ol style="list-style-type: none"> 1) Landfill operation : Active and passive control 2) Sustainable construction material: Geopolymer concrete 3) Land use pattern: Urbanization & Industrialization , impact on forest land 4) Globalization of fast clothing fashion : Its impact on society, economics and environment 5) Globalization of food habits: Its impact on society, economics and environment 6) NEWater : A pillar of Singapore’s water sustainability strategy <p style="text-align: center;"><u>Category – B</u></p> <ol style="list-style-type: none"> 1) Agriculture waste and its useful products for sustainable living in villages of Uttarakhand 2) Sustainable solution to road traffic management of UPES campus 3) Food waste management of canteen in UPES 4) Zero discharge toilets 5) Increasing efficiency of “Anti-Hail Gun” for western Himalayan region of India 6) Sustainable solution for Delhi air pollution 	15+15=30	CO3