


Name:			
Enrolment No:			
<b>UPES</b> <b>Supplementary Examination, December 2023</b>			
<b>Course: M Tech (HSE)</b> <b>Program: Sustainable Technology and Industries</b> <b>Course Code: HSFS 8027</b>		<b>Semester: III</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions:</b> All questions are compulsory.			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
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 number one refers to ..... d. "Sustainable cities and communities" is the SD Goal number ....	<b>4</b> (one marks each questions)	<b>CO1</b>
Q 2	How <b>Chandrayaan -3</b> will help in achieving sustainable development goals?	<b>4</b>	<b>CO1</b>
Q 3	How you conduct a life cycle assessment with LCA software?	<b>4</b>	<b>CO1</b>
Q 4	"Limit your activities is the mantra for sustainable development". What is your view point on this statement?	<b>4</b>	<b>CO4</b>
Q 5	What was your contribution in UPES Sustainability Fair 2022? Pl also share your key learnings.	<b>2+2=4</b>	<b>CO4</b>
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Explain Industry 4.0 implications for sustainable development in terms of circular economy.	<b>10</b>	<b>CO2</b>
Q 7	Compare the carbon footprint of rural households and urban households.	<b>10</b>	<b>CO1</b>
Q 8	Our prime minister Mr Narendra Modi has launched <b>Mission LiFE</b> , what are the aim and objectives of this mission, how it will help to achieve SD Goals.	<b>5+5=10</b>	<b>CO3</b>
Q 9	What is community development? Explain different models of community development with examples?	<b>4+6=10</b>	<b>CO4</b>

**SECTION-C**  
**(2Qx20M=40 Marks)**

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