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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April-May 2024

Course: Sustainable SCM	Semester: IV
Program: MBA OM	Time : 03 hrs.
Course Code: LSCM 8031	Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.	Attempt all questions in this section	Marks	CO
Q 1	Answer the following		
(a)	Corporate social responsibility involves managerial decision making that considers what three impacts? A) environmental, legal, and financial B) environmental, legal, and societal C) educational, environmental, and societal D) societal, legal, and financial E) environmental, societal, and financial	2	CO1
(b)	Which of the following refers to developing policies and practices that enhance the competitiveness of an organization while advancing the economic and social conditions of the community in which it operates? A) the commons B) a systems view C) the triple bottom line D) shared value E) carbon footprint	2	CO1
(c)	What refers to meeting the needs of the present without compromising the ability of future generations to meet their needs? A) corporate social responsibility B) economic sustainability C) carbon footprint D) sustainability E) closed-loop supply chains	2	CO1
(d)	Resources held by the public are also said to be held in what? A) escrow B) the system C) contempt D) perpetuity E) the common	2	CO1
(e)	One way to think of sustainability is to consider the systems necessary to support the triple bottom line of the three <i>Ps</i> , which are:	2	CO1

	A) price, promotion, and product. B) people, places, and products. C) people, planet, and profit. D) price, promotion, and profit. E) people, pollution, and profit.		
(f)	Companies can improve the <i>triple bottom line</i> with sustainability by minimizing what four things? A) raw material, energy, water, and waste B) raw material, transport, manufacture, and disposal C) people, planet, profit, and pollution D) pollution, carbon footprint, profit, and people E) lawsuits, advertisements, coupons, and layoffs	2	CO1
(g)	The carbon footprint is defined as a measure of total greenhouse gas emissions caused directly or indirectly by what four things? A) a factory, an office building, a warehouse, or a truck B) an organization, a product, an event, or a person C) an organization, a product, an animal, or a person D) an organization, a government, a product, or a person E) a product, an event, a person, or an animal	2	CO1
(h)	What are the 3 Rs for sustainability? A) reduce, reuse, and reclaim B) reduce, reproduce, and recycle C) reproduce, reuse, and recycle D) reduce, reuse, and recycle E) reduce, reclaim, and recycle	2	CO1
(i)	What refers to analysis of environmental impacts of products from the design stage through end-of-life? A) ISO 14000 B) life cycle assessment C) carbon footprint D) economic sustainability E) closed-loop supply chain analysis	2	CO1
(j)	What is sometimes referred to as the fourth "R" of sustainability? A) reclaim B) recover C) renew D) improved reputation E) reproduce	2	CO1

SECTION B
4Qx5M= 20 Marks

Q	Attempt all questions		
1	Why must companies practice corporate social responsibility?	5	CO2
2	Why are sustainable business practices important?	5	CO2
3	Discuss the 3 R s.	5	CO2

4	<p>The Brew House needs to decide which of two coffee maker designs is better environmentally. Using the following tables, determine which model is the better design alternative</p> <p>Brew Master</p> <table border="1" data-bbox="245 342 1149 569"> <thead> <tr> <th>PART</th> <th>RESALE REVENUE PER UNIT</th> <th>RECYCLING REVENUE PER UNIT</th> <th>PROCESSING COST PER UNIT</th> <th>DISPOSAL COST PER UNIT</th> </tr> </thead> <tbody> <tr> <td>Metal frame</td> <td>\$1.65</td> <td>\$2.87</td> <td>\$1.25</td> <td>\$0.75</td> </tr> <tr> <td>Timer</td> <td>0.50</td> <td>0.00</td> <td>1.53</td> <td>1.45</td> </tr> <tr> <td>Plug/cord</td> <td>4.25</td> <td>5.65</td> <td>6.22</td> <td>0.00</td> </tr> <tr> <td>Coffee pot</td> <td>2.50</td> <td>2.54</td> <td>2.10</td> <td>1.35</td> </tr> </tbody> </table> <p>Brew Mini</p> <table border="1" data-bbox="245 615 1149 808"> <thead> <tr> <th>PART</th> <th>RESALE REVENUE PER UNIT</th> <th>RECYCLING REVENUE PER UNIT</th> <th>PROCESSING COST PER UNIT</th> <th>DISPOSAL COST PER UNIT</th> </tr> </thead> <tbody> <tr> <td>Plastic frame</td> <td>\$1.32</td> <td>\$3.23</td> <td>\$0.95</td> <td>\$0.95</td> </tr> <tr> <td>Plug/cord</td> <td>3.95</td> <td>4.35</td> <td>5.22</td> <td>0.00</td> </tr> <tr> <td>Coffee pot</td> <td>2.25</td> <td>2.85</td> <td>2.05</td> <td>1.25</td> </tr> </tbody> </table>	PART	RESALE REVENUE PER UNIT	RECYCLING REVENUE PER UNIT	PROCESSING COST PER UNIT	DISPOSAL COST PER UNIT	Metal frame	\$1.65	\$2.87	\$1.25	\$0.75	Timer	0.50	0.00	1.53	1.45	Plug/cord	4.25	5.65	6.22	0.00	Coffee pot	2.50	2.54	2.10	1.35	PART	RESALE REVENUE PER UNIT	RECYCLING REVENUE PER UNIT	PROCESSING COST PER UNIT	DISPOSAL COST PER UNIT	Plastic frame	\$1.32	\$3.23	\$0.95	\$0.95	Plug/cord	3.95	4.35	5.22	0.00	Coffee pot	2.25	2.85	2.05	1.25	5	CO2
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SECTION-C
3Qx10M=30 Marks

Q	Attempt all questions		
5	<p>Blue Star is starting a new distribution service that delivers auto parts to the service departments of auto dealerships in the local area. Blue Star has found two light-duty trucks that would do the job well, so now it needs to pick one to perform this new service. The Ford Tri Van costs \$28,000 to buy and uses regular unleaded gasoline, with an average fuel efficiency of 24 miles per gallon. The Tri Van has an operating cost of \$.20 per mile. The Honda City Van, a hybrid truck, costs \$32,000 to buy and uses regular unleaded gasoline and battery power; it gets an average of 37 miles per gallon. The City Van has an operating cost of \$.22 per mile. The distance traveled annually is estimated to be 22,000 miles, with the life of either truck expected to be 8 years. The average gas price is \$4.25 per gallon.</p> <p>a) Based on life cycle cost, which model truck is the best choice?</p> <p>b) How many miles does Blue Star need to put on a truck for the costs to be equal?</p> <p>c) What does the crossover point in years?</p>	10	CO3
6	<p>Greenstreets Recycling, Inc., collects used motor oil from several collection sites around the Greater Stanford area. To minimize the use, and thereby the cost, of its labor, vehicle, and energy resources, the company is interested in locating the shortest route that will allow its collection vehicle to visit each collection site exactly once. The following table provides the travel distances in miles between each site. Note that the company's recycling facility is located at site A. Provide an efficient route for the collection vehicle.</p>	10	CO3

From/To	A	B	C	D	E	F
A (depot)	-	25	50	48	41	60
B	25	-	35	22	23	43
C	50	35	-	25	47	65
D	48	22	25	-	24	40
E	41	23	47	24	-	21
F	60	43	65	40	21	-

7	Designing supply chains that are energy efficient and environmentally responsible helps a firm achieve a competitive priority of low-cost operations, which supports the firm's financial responsibility to its shareholders. Explain how focusing on energy efficiency can pose some ethical dilemmas for supply chain managers.	10	CO3
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SECTION-D
2Qx15M= 30 Marks

Q	Read the case & answer the questions		
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	<p style="text-align: center;">Building Sustainability at the Orlando Magic's Amway Center</p> <p>When the Amway Center opened in Orlando in 2011, it became the first LEED (Leadership in Energy and Environmental Design) gold-certified professional basketball arena in the country. It took 10 years for Orlando Magic's management to develop a plan for the new state-of-the-art sports and entertainment center. The community received not only an entertainment center but an environmentally sustainable building to showcase in its revitalized downtown location. "We wanted to make sure we brought the most sustainable measures to the construction, so in operation we can be a good partner to our community and our environment," states CEO Alex Martins. The new 875,000-square foot facility—almost triple the size of the Amway Arena it replaced—is now the benchmark for other sports facilities.</p> <p>Here are a few of the elements in the Amway Center project that helped earn the LEED certification:</p> <ul style="list-style-type: none"> ◆ The roof of the building is designed to minimize daytime heat gain by using reflective and insulated materials. ◆ Rainwater and air-conditioning condensation are captured and used for irrigation. 		
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	<ul style="list-style-type: none"> ◆ There is 40% less water usage than in similar arenas (saving 800,000 gallons per year), mostly through use of high efficiency restrooms, including low-flow, dual-flush toilets. ◆ There is 20% energy savings (about \$750,000 per year) with the use of high-efficiency heating and cooling systems. ◆ The center used environmentally friendly building materials and recycled 83% of the wood, steel, and concrete construction waste that would have ended up in a landfill. ◆ There is preferred parking for hybrids and other energy efficient cars. ◆ The center is maintained using green-friendly cleaning products. <p>LEED certification means five environmental measures and one design measure must be met when a facility is graded by the U.S. Green Building Council, which is a nationally accepted benchmark program. The categories are sustainability of site, water efficiency, energy, materials/resources, indoor environmental quality, and design innovation. Other Amway Center design features include efficient receiving docks, food storage layouts, and venue change-over systems. Massive LED electronic signage controlled from a central control room also contributes to lower operating costs. From an operations management perspective, combining these savings with the significant ongoing savings from reduced water and energy usage will yield a major reduction in annual operating expenses. “We think the LEED certification is not only great for the environment but good business overall,” says Martins.</p>		
8	Find a LEED-certified building in your area and compare its features to those of the Amway Center & What does a facility need to do to earn the gold LEED rating? What other ratings exist?	15	CO4
9	Why did the Orlando Magic decide to “go green” in its new building?	15	CO4