UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM & ENERGY STUDIES

End Semester Examination, December 2021

Course: Operations Management | **Semester: I**
Program: MBA (LSCM) | **Duration: 3 Hours**
Course Code: LSCM7001 | **Max. Marks: 100**

IMPORTANT INSTRUCTIONS

1. ***Each Question will carry equal Marks section wise***

Q.No	Section A (Type the answers in test box)	10Qx2M= 20Marks	Cos
Q1	1) Operations management is applicable: A) mostly to the manufacturing sector. B) to all firms, whether manufacturing or service. C) to services exclusively. D) to the manufacturing sector exclusively. E) mostly to the service sector.		CO1
Q2	2) Which of the following are the primary functions of all organizations? A) sales, quality control, and production/operations B) research and development, finance/accounting, and purchasing C) marketing, human resources, and finance/accounting D) production/operations, marketing, and human resources E) marketing, production/operations, and finance/accounting		CO1
Q3	3) What is a global network of organizations and activities that supply a firm with goods and services? A) provider network B) supply tree C) supply chain D) vendor network E) vendor tree		CO1

Q4	4) Which of the following fosters specialization and worldwide supply chains? A) more expensive transportation B) managers with a broad knowledge of many things C) economies of scope D) instant communication E) high trade tariffs		CO1
Q5	5) A product's life cycle is divided into four stages, which are: A) introduction, growth, maturity, and decline. B) introduction, growth, stability, and decline. C) introduction, maturity, saturation, and decline. D) introduction, growth, saturation, and maturity. E) incubation, growth, maturity, and decline.		CO1
Q6	6) Which of the following is an example of an external product development strategy? A) new internally developed products B) enhancements to existing products C) migrations of existing products D) alliances E) All of these are examples of internal product development strategy.		CO1
Q7	7) The fundamental purpose of an organization's mission statement is to: A) create a good human relations climate in the organization. B) generate good public relations for the organization. C) define the organization's purpose in society. D) define the functional areas required by the organization. E) define the operational structure of the organization.		CO1
Q8	8) A document for production that gives the instruction to make a given quantity of a particular item, usually to a given schedule, is a(n): A) bill of information. B) value analysis. C) work order. D) route sheet. E) assembly chart.		CO1

<table>
<tr><td>Q9</td><td>9) A product-focused process is commonly used to produce:
A) high-volume products of either high- or low-variety.
B) high-volume, high-variety products.
C) low-variety products at either high- or low-volume.
D) low-volume, high-variety products.
E) high-volume, low-variety products.</td><td></td><td>CO2</td></tr>
<tr><td>Q10</td><td>10) Which one of the following products is most likely made in a job shop environment?
A) custom furniture
B) cigarettes
C) canned vegetables
D) television sets
E) rolls of newsprint</td><td></td><td>CO2</td></tr>
<tr><td></td><td>Section B
(Scan and upload)</td><td>4Qx5M= 20 Marks</td><td></td></tr>
<tr><td>Q11</td><td>Create a Pareto chart for the following mistakes made in grading an exam.<table><tr><td>Cause</td><td>Frequency</td></tr><tr><td>Incorrect Sum</td><td>42</td></tr><tr><td>Question marked wrong was right</td><td>5</td></tr><tr><td>Question marked right was wrong</td><td>9</td></tr><tr><td>Partial Credit not consistent</td><td>73</td></tr></table></td><td></td><td>CO2</td></tr>
<tr><td>Q12</td><td>Describe how the visual workplace can increase information flow, improve efficiency, and eliminatenon-value-adding activities. Support your argument with a few examples.</td><td></td><td>CO2</td></tr>
<tr><td>Q13</td><td>What are the underlying principles of Toyota's standard work practices?</td><td></td><td>CO2</td></tr>
<tr><td>Q14</td><td>Why do range charts exist? Aren't x-bar charts enough?</td><td></td><td>CO3</td></tr>
<tr><td></td><td>Section C
(Scan and upload)</td><td>3Qx10M=30 Marks</td><td></td></tr>
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Q15	A Methods and Measurements Analyst needs to develop a time standard for a certain task. The task involves use of a ruler, square, and portable electric saw to mark and cut the "notch" in a rafter (a standard carpentry taskof home construction). In a preliminary study, he observed one of his workers performing this task five times. The observations were made in an air-conditioned, well-lit training facility, at ground level, with all tools and equipment clean and readily available. Observation: 1 2 3 4 5 Task time (seconds): 82 74 80 88 76 (a) What is the actual average time for this task? (b) What is the normal time for this task if the employee worked at a 10% faster pace than is typical foradequately trained workers? (c) What is standard time for this task if allowances sum to 12%? (d) If the analyst then thought more carefully about his experiment and decided that the allowances needed to be increased to match the real (outside, not air-conditioned) work environment, and that the proper allowance was not 12% but 20%, what is the revised standard time?		CO2
Q16	The following data are pulled from a recent Walsh Manufacturing annual report. Assets Raw material inventory $150,000 Work-in-process inventory $50,000 Finished goods inventory $330,000 Property, plant & equipment $500,000 Other assets $140,000 Total assets $1,170,000 Condensed Income Statement Revenue $2,000,000 Cost of goods sold $700,000 Other expenses $1,000,000 Net income $300,000 Calculate: (a) Percentage invested in inventory, (b) Inventory turnover, and (c) Weeks of supply.		CO3

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<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q17</td><td>Your company has compiled the following data on the small set of products that comprise the specialty repair parts division. Perform ABC analysis on the data. Over which products do you suggest the firm keep the tightest control? Explain.
<table>
<tr><th>SKU</th><th>Annual Demand</th><th>Unit Cost</th></tr>
<tr><td>R11</td><td>125</td><td>$25</td></tr>
<tr><td>S22</td><td>55</td><td>$90</td></tr>
<tr><td>T33</td><td>100</td><td>$800</td></tr>
<tr><td>U44</td><td>150</td><td>$150</td></tr>
<tr><td>V55</td><td>100</td><td>$45</td></tr>
</table></td><td></td><td>CO3</td></tr>
<tr><td></td><td></td><td>2Qx15M= 30 Marks</td><td></td></tr>
<tr><td>Q18</td><td>A refrigeration and heating company—one that installs and repairs home central air and heating systems—has asked your advice on how to analyze their service quality. They have logged customer complaints. Here's a recent sampling. Use the supplied template to construct a conventional cause-and-effect diagram.
Place each ofthe complaints onto a main cause; justify your choice with a brief comment as necessary.
1. "I was overcharged—your labor rates are too high." 2. "The repairman left trash where he was working." 3. "You weren't here whenyou said you would be. You should call when you must be late." 4. "Your repairman smoked in my house." 5. "The part you installed is not as good as the factory original." 6. "Your repairman was here for over two hours, but he wasn't taking his work seriously." 7. "You didn't tighten some of the fittings properly—the system's leaking." 8. "Your estimate of repair costs was WAY off." 9. "I called you to do an annual inspection, but you've done more—work that I didn't authorize." 10. "Your mechanic is just changing parts—he doesn't have a clue what's really wrong." 11. "Your bill has only a total—I wanted to see detail billing." 12. "Your testing equipment isn't very new—are you sure you've diagnosed the problem?" 13. "One of the workmen tracked mud into my living room."</td><td></td><td>CO4</td></tr>
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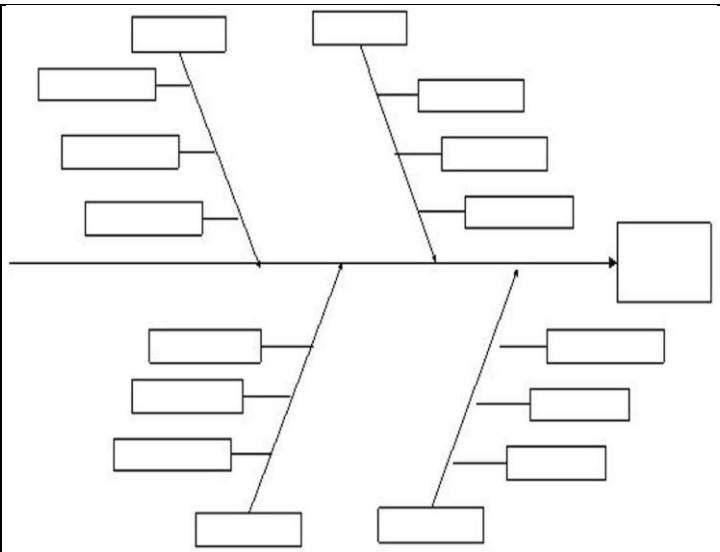

Q19

Examine the Statistical Process Control outputs below. Answer the following questions.

(a) What is the sample size?
(b) What is the number of samples?
(c) What is the mean of sample 8; what is the range of sample 10?
(d) Is this process in control? Explain—a simple Yes or No is insufficient.
(e) What additional steps should the quality assurance team take?

		Mean	Range
UCL (Upper control limit)		12.6856	1.0193
CL (Center line)		12.36	0.67
LCL (Lower control limit)		12.0344	0

Sample Number	Item1	Item2	Item3	Item4	Mean	Range
Sample 1	12.2	12.6	12	12.1	12.225	0.6
Sample 2	11.9	12.5	12.4	12.7	12.375	0.8
Sample 3	12	12.2	12.9	13.1	12.55	1.1
Sample 4	12.5	12.5	12.4	12.8	12.55	0.4
Sample 5	12.2	12.8	12.7	12	12.425	0.8
Sample 6	12.1	12.5	11.8	12.3	12.175	0.7
Sample 7	12.3	12.4	12.8	12.4	12.475	0.5
Sample 8	12	12.1	12.4	12.2	12.175	0.4
Sample 9	12.1	12.8	12.4	11.9	12.3	0.9
Sample 10	12.6	12.4	12.1	12.3	12.35	0.5

CO4