

Name:  
Enrolment No:



UNIVERSITY WITH A PURPOSE

**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**

**End semester Examination – Jan, 2021**

**Course: Operations and Materials Management**  
**Subject/: BBA LM**  
**Course Code: LSCM2001**

**Semester: I**  
**Time: 3 Hours**  
**Max. Marks: 100**

**SECTION A**

**1. Each Question will carry 5 Marks**

**2. Instruction: Complete the statement / Select the correct answer(s)**

S.No.	Question	COs
Q 1	The various system parameter of production planning and control are _____	CO3
Q 2	The major function of _____ is translating the aggregate plans into specific end items	CO1
Q 3	The consequences of poor quality are _____, _____, _____ and _____.	CO1
Q 4	The various types of inventory costs are _____, _____ and _____.	CO2
Q 5	Select all the correct statements a) Design capacity is maximum output per unit time b) Effective capacity is minimum output per unit time c) Theoretical capacity is actual output per unit time d) Safety capacity is amount of capacity reserved for unanticipated events	CO3
Q 6	The various types of facility layout are _____, _____, _____ and _____.	CO2

**SECTION B**

**1. Each question will carry 10 marks**

**2. Instruction: Solve the numerical problems and theoretical problems**

Q 7	<p>Student tuition at Nanyang University is \$200 per semester credit hour. The state supplements school revenue by \$100 per semester credit hour. Average class size for a typical 4-credit course is 60 students. Labor costs are \$4,000 per class, material costs are \$20 per student per class, and overhead costs are \$25,000 per class.</p> <p>a) What is the multifactor productivity ratio for this course process? b) If instructors work an average of 10 hours per week for 18 weeks for each 4-credit class of 60 students, what is the labor productivity ratio?</p>	CO1								
Q 8	<p>A sports goods manufacturing company intends to setup a facility to produce badminton racquets. It is considering sites X, Y and Z for this purpose. Cost data for the sites are given in the table below. If the selling price is Rs. 300 per racquet and the annual demand is 3000 which site will you recommend?</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>Location X</th> <th>Location Y</th> <th>Location Z</th> </tr> </thead> <tbody> <tr> <td style="background-color: #0056b3; height: 20px;"></td> <td style="background-color: #0056b3; height: 20px;"></td> <td style="background-color: #0056b3; height: 20px;"></td> <td style="background-color: #0056b3; height: 20px;"></td> </tr> </tbody> </table>		Location X	Location Y	Location Z					CO4
	Location X	Location Y	Location Z							

	Fixed Cost	Rs. 50000	Rs. 100000	Rs. 120000	
	Variable Cost	Rs. 135	Rs. 110	Rs. 120	

Q 9 What are the different types of transformation process? Give examples of any three. CO1

Q 10 What are the advantages and limitations of job shop production and mass production? CO4

The following information is known about a group of items. Classify the material in A, B, C categories

Model No.	Volume	Unit Price
1	1000	90
2	500	154
3	1550	17
4	350	42.86
5	1000	12.5
6	600	14.17
7	2000	0.6
8	100	8.5
9	1200	0.42
10	250	0.60

Q 11 CO3

**Section C**

- Each Question carries 20 Marks.
- Instruction: Solve the case study

Q 12 Critically compare the mixed model assembly lines of Honda and Toyota. Which approach is better according to you?  
 Honda has two major car manufacturing facilities in Japan – one at Sayama, north of Tokyo and other at Suzuka, west of Nagoya. The Sayama plant is the oldest one and its two assembly lines can make up to 600,000 vehicles a year. Suzuka’s three assembly lines have a maximum capacity of around 800,000 vehicles a year. The production lines at both the plants are capable enough of making various models of cars simultaneously. For instance, at Sayama, seven types of cars can be assembled on the same assembly line – the basic Accord, Prelude, and Legend, the two door Legend, the Accord derived Accord Inspire, Vigor and Ascot. The main advantage of the mixed model assembly line is that declining demand for one model can be counter balanced with increased demand for others.  
 Mixed models on single lines is no longer a novelty in the automobile industry. Toyota has a better known variant of such an assembly line. Toyota arranges different models one after the other on conveyor belts across the line to balance the workload for the workers and to balance delivery of parts. On the other hand, Honda has always produced in lots (typically in factors of 60 cars) of one model at a time and the cars are exactly the same in all respects (eg : red Civics, left hand drive, to be exported to Europe).  
 At Sayama, several batches of different derivative Accords may be manufactured before the line is switched to make Preludes for several batches. Models may be switched on the line 3 or 4 times in a day. This system allows easy planning of the supply of parts and at the same time offers flexibility in manufacturing according to fluctuating demand patterns.

Q 12 CO3

	<p>Unlike the Toyota system of mixing the cars to accommodate the workers who stay at fixed work stations or in fixed groups, the Honda production system reorganizes the workforce, when necessary, with groups of workers moving about the assembly line to balance the workload. While designing a new model, it is kept in mind that it be produced on the existing line with the same fixed equipment across the line. This is necessary to avoid staggering investments for making changes in the existing assembly line to suit the design requirements of the new model.</p>	
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