UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End semester Examination – Jan, 2021

Course: Operations Management   **Semester: I**
Subject/: MBA LSCM   **Time: 3 Hours**
Course Code: LSCM7001   **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 types of facility layout are_____, _____, _____ and _____.	CO1
Q 2	In _____ model it is assumed that the order quantity is received all at once while in _____ model the order quantity is received gradually.	CO1
Q 3	The phase one and phase two of facility location are _____ and _____.	CO2
Q 4	The various types of inventory costs are _____, _____ and _____.	CO2
Q 5	Select all the correct statements a) End items are finished goods scheduled in the MPS or FAS that must be forecast b) Dependent demand is demand that is directly related to the demand for other SKUs and can be calculated without needing to be forecasted c) A competitively dominant customer experience is often called a value proposition d) Crash time is the maximum possible time the activity can realistically be completed	CO3
Q 6	A team of workers makes 500 units of products, which is sold in the market at $12 each. The accounting department reports that for this job, the actual costs are $500 for labor, $1100 for materials and $400 for overhead. The multifactor productivity is _____.	CO4

SECTION B

1. Each question will carry 10 marks
2. Instruction: Solve the numerical problems

Q 7	Find the forecast for the month of June using exponential smoothing. The value of alpha=0.2 Demand data Jan 23.3 Feb 32.4 Mar 34.0 Apr 27.5 May 30.5	CO2
Q 8	A book binder has one printing press, one binding machine and manuscripts of 6 different books. The process is first printing and then binding. The times required for performing binding and printing operations for different books are shown below: {{TABLE}}	CO4

Table for Q 8:

Book	1	2	3	4	5	6
Binding time(hours)	20	90	80	20	120	15

Printing time(hours)	25	60	75	30	90	35		

Decide the optimum sequence of processing of books in order to minimize the total time required to bring out all the books. Also find the total minimum elapsed time.

Q 9	Assume that the company is going to manufacture the item with the equipment that is estimated to produce 100 units per day. The consumption of the item is 10000 units/year. The cost of the unit thus produced is Rs 3.50 per unit. The set-up cost is Rs. 150 per set-up and the inventory carrying charge is 25 %. What is the optimum production lot size(Q*)? Assume 250 working days in the year.	CO2
Q 10	Explain the GAP Model of Quality Management. Explain with an example of manufacturing shoes.	CO4
Q 11	What is customer benefit package? Explain with an example from restaurant business.	CO1

Section C

1. Each Question carries 20 Marks.
2. Instruction: Solve any one numerical example

Q 12	a) Draw the project network for the below activities. Identify the critical path(s) and the project completion time. b) Draw the Gantt Chart for the same project	CO3

Activity	Activity Description	Immediate Predecessors	Normal time(in weeks)
A	Define software project objectives, budget, due date and possible staff	None	3
B	Inventory new and old software interfaces and features	None	5
C	Assemble teams and allocate work	A,B	2
D	Design and develop code for old to new databases	C	7
E	Design and develop code for PC network	C	5
F	Test and debug PC network code	E	3
G	Design and develop code for off-site sales force	C	4
H	New complete system test and debug	D,G,F	3
I	Train PC system and database operators	D,F	4
J	Train off-site sales force	H	1
K	Two week beta test of new system	I,J	2

OR

Product A is made from two components, B and C. It takes one B and three C's to make a single product A. Component B is made from two parts D's. Component C is made from 1 part D and 2 part E's. Use this information together with data below to answer the following questions:

Part	Lead Time	Lot Size	On hand	Scheduled Rcpts
A	1	Lot for Lot	50	None
B	1	Lot for Lot	10	None
C	2	100	50	None
D	1	200	120	None
E	2	200	0	200, week 1

a) Make MRP records for A, B, C, D, and E. Production quantities and production start dates for A are: 20 in week 2, 50 in week 4, 30 in week 6, 40 in week 7, 50 in week 9, and 40 in week 11.

Use the below MRP record:

Week	
Gross Requirement	
Scheduled receipts	
Projected Available	
Net requirements	
Planned order receipt	
Planned order release	