

Name:  
Enrolment No:



UNIVERSITY WITH A PURPOSE

**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**

**End semester Examination – Jan, 2021**

**Course: Operations Management**  
**Subject/: MBA CORE**  
**Course Code: LSCM 7001**

**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 performance objectives of operations management include <u>efficiency</u> , _____, _____, _____ and _____.	CO1
Q 2	In inventory modelling, the various types of inventory costs are _____, _____ and _____.	CO1
Q 3	The dimensions of quality are _____, _____, _____, and _____. (List any four)	CO1
Q 4	Criteria that differentiates one firm from another in the market are called _____, whereas the criteria that permits the firm's products/services to even be considered for purchase are called _____.	CO1
Q 5	The difference(s) between the basic EOQ model and the production order quantity model is (are) that  a) The production order quantity model does not require the assumption of known, constant demand. b) There are no holding costs in the production order quantity model. c) The production order quantity model does not require the assumption of instantaneous delivery. d) The EOQ model does not require the assumption of known, constant lead time.	CO2
Q 6	A network-based schedule has four paths, namely 7, 8, 9, and 10 weeks. If the 10-week path is compressed to 8 weeks, then:  a) We now have two critical paths. b) The 9-week path is now the critical path. c) Only the 7-week path has slack. d) Not enough information is provided to make a determination.	CO2

**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 and mean absolute deviation 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

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.

CO3

Q 9

Green Grass's plant manager just received marketing's latest forecasts of Big Broadcaster sales for the next year. She wants its production line to be designed to make 2,400 spreaders per week for at least the next three months. The plant will operate 40 hours per week. The processes involved in making Big Broadcaster are listed in table below. Find the appropriate balanced production line.

Work Element	Description	Time (Sec)	Immediate Predecessor(s)
A	Bolt leg frame to hopper	50	None
B	Insert Impeller Shaft	30	A
C	Attach axle	50	A
D	Attach agitator	40	B
E	Attach drive wheel	6	B
F	Attach free wheel	35	C
G	Mount lower post	15	C
H	Attach Controls	20	D,E
I	Mount Nameplate	18	F,G

CO2

Q 10

Discuss the concept of total value generation in Supply Chain Management Context.

CO4

Q 11

What is customer benefit package? Explain with an example from restaurant business.

CO4

**Section C**

**1. Each Question carries 20 Marks.**

**2. Instruction: Solve any one numerical example**

A small project is composed of seven activities whose time estimates are listed below. Activities are being identified as i-j.(beginning and end node)

Preceding Node i	Succeeding Node j	most likely time a	optimistic time m	pessimistic time b
1	2	1	3	7
1	3	1	4	7
1	4	2	4	8
2	5	1	1	1
3	5	2	7	14
4	6	2	5	8
5	6	5	9	15

- i. Draw the network
- ii. Calculate the expected time and variance for each activity
- iii. Find the expected project completion time
- iv. Calculate the probability that the project may take more than 22 weeks. (Write your answer in Z terms)

**OR**

The MDH Masala company has to process five items on three machines:- A, B & C. Processing times are given in the following table:

ITEM	A	B	C
1	5	5	7
2	9	5	9
3	8	3	11
4	6	4	8
5	3	6	7

Find the sequence that minimizes the total elapsed time. Also find the idle time for each machines

Q 12

CO3