PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF MANAGEMENT   SET B

MID TERM EXAMINATION

Even Semester: 2018-19   **Date**: 25 March 2019

Course Code: OPS 101   **Time**: 2 Hours

Course Name: Production and Operations Management   **Max Marks**: 40

Program & Sem: MBA & II Sem   **Weightage**: 20%

Instructions:
   *(i)   **All questions are compulsory***

Part A

Answer **all** the Questions. **Each** question carries **two** marks.   (6Qx2M=12)

1. Define Transformation Process with example.
2. Define Core Service and Value Added Service.
3. Explain the concept of Design for Customers.
4. What are Order Qualifiers and Order Winners?
5. What are the different types of processes used to produce goods and services?
6. When should a company consider a new facility location?

Part B

Answer **all** the Questions. **Each** question carries **four** marks.   (3Qx4M=12)

7. Explain how Operation can be used as a strategy.
8. Discuss different types of Facility Layouts.
9. A glass factory specializing in crystal is experiencing a substantial backlog, and the firm's management is considering three courses of action:
   a. Do nothing
   b. Arrange for subcontracting
   c. Construct a new facility

The correct choice depends largely upon demand, (low, medium, or high). By consensus, management estimates the respective demand probabilities as 0.1, 0.5, and 0.4.

	0.1	0.5	0.4
	Low	Medium	High
A	20	40	60
B	25	35	80
C	-90	55	200

What is your advice to the company?

Part C

Answer **both** the Questions. **Each** question carries **eight** marks.   (2Qx8M=16)

10. A manufacturing company gives the following data for the month of February:

Output	= INR 20,0000
Labour cost	= INR 30000
Material cost	= INR 45000
Energy cost	= INR 2500
Capital cost	= INR 7500
Other Costs	= INR 2000

Calculate: (a) Total Productivity

(b) Partial Productivity in terms of

(i)   Labour
(ii)   Energy
(iii)   Material

(c) Multi-factor Productivity in terms of Labour, Material and Capital Costs

11. A manufacturing company is considering three possible locations for setting up a new factory. Select the most suitable location from the given data using Factor Rating Method

Factor	Rating Factor (1- 10)	Location rating (1 – 100)		
		Location 1	Location 2	Location 3
Close to customers	9	80	60	90
Labour availability	8	60	40	90
Ease of Installation of Machinery	5	30	80	70
Power	6	90	50	100
Availability of Water	7	80	20	30
Availability of raw materials	10	60	50	40
Transport facility	4	50	30	20
Taxes and Govt. Regulations	3	30	50	20

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PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF MANAGEMENT   SET A

MID TERM EXAMINATION

Even Semester: 2018-19   **Date**: 25 March 2019

Course Code: OPS 101   **Time**: 2 Hours

Course Name: Production and Operations Management   **Max Marks**: 40

Program & Sem: MBA & II Sem   **Weightage**: 20%

Instructions:

(i)   ***All questions are compulsory***

Part A

Answer **all** the Questions. **Each** question carries **two** marks.   (6Qx2M=12)

1. Define Production?
2. Define Productivity?
3. What are the important factors of Location Decision?
4. List the Factors which affect POM.
5. What are the various operating strategies which can be used during Production and Operations management?
6. What are the four components of time series?

Part B

Answer **all** the Questions. **Each** question carries **four** marks.   (3Qx4M=12)

7. Write a note on historical milestones of POM.
8. Represent Facility Planning for a Hospital.
9. A wrapping paper company produced 3,000 rolls of paper one day with 2 workers and working for 8 hour shift. Standard price is Rs.1/roll. Labor cost was Rs.160, Material cost was Rs. 50, and overhead was Rs. 320.
    - Determine Labour Productivity.
    - Determine Multifactor Productivity.

Part C

Answer **both** the Questions.   (2Q=16 Marks)

10. With a neat sketch represent the 4 types of layouts based on volume variety concept.
(6 Marks)

11. A processing company has recently won several major contracts in the Southern region of India, and wants to open a new, large facility to serve these areas. Because customer service is so important, the company wants to be as near its "customers" as possible. A preliminary investigation has shown that Bangalore, Chennai, and Hyderabad are the three most desirable locations, and the processing company has to select one of these.

Factors Considered	Weights	Score for Cities		
		Bangalore	Chennai	Hyderabad
Proximity to customer	0.25	95	90	70
Good Approach roads	0.20	90	85	90
Ease of Installation of Machinery	0.15	85	80	75
Property Taxes	0.15	80	75	90
Availability of Skilled persons	0.10	75	95	85
Wage Rates	0.10	70	80	80
Travel cost	0.05	65	65	75
Office services	0.05	60	70	65

- Using the location scoring method (Qualitative Analysis), determine the best location for the new processing facility. (10 Marks)

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PRESIDENCY UNIVERSITY,
BENGALURU

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

SCHOOL OF MANAGEMENT

END TERM FINAL EXAMINATION

Even Semester: 2018-19   **Date**: 03 June 2019

Course Code: OPS 101   **Time**: 3 Hours

Course Name: Production and Operations Management   **Max Marks**: 80

Program & Sem: MBA & II Sem   **Weightage**: 40%

Instructions:
  i.   *Read the questions properly and answer accordingly.*
  ii.   *Question paper consists of 3 parts.*
  iii. *Scientific and Non-programmable calculators are permitted.*

Part A

Answer **all** the Questions. **Each** question carries **four** marks.   (5Qx4M=20M)

1. Define forecasting?

2. Define Productivity?

3. What are the different Production and Operations Management process types?

4. What are the different averaging techniques used in forecasting?

5. List the different manufacturing layout types.

Part B

Answer **all** the Questions. **Each** question carries **ten** marks.   (3Qx10M=30M)

6.

  i.   Explain the different service process types with examples.   (5 Marks)

  ii.   Explain difference between takt time and throughput time from the illustration

Exhibit
Illustrate Takt Time and Throughput Time on an Assembly Line

Step 1 → Step 2 → Step 3 → Step 4 → Step 5 → Step 6

(5 Marks)

7.
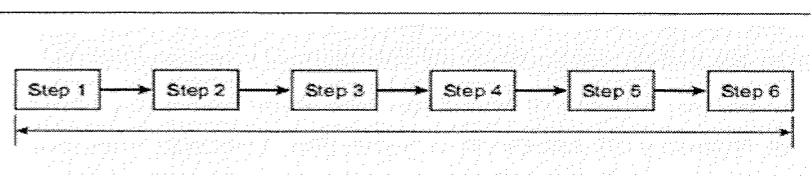
i. In Materials Management, what are order qualifiers and order winners?   (5 Marks)

ii. Calculate the Three Point Moving Average (MA3) forecast for the 6th month using the data given.

Month	Demand
1	42
2	40
3	43
4	40
5	41

If the Actual demand for the 6th month is 40, what is the 3 point moving average forecast for the 7th month?

(5 Marks)

8.

i. Explain two types of manufacturing layouts with examples.

(5 Marks)

ii. Data on actual demand is provided for 5 months. Provide the formula for estimating the forecasts for time series in exponential smoothing. Using exponential smoothing, calculate the forecasts from month 3 to 5, given smoothing constants $\alpha=0.20$ and $\alpha=0.50$. Compare the values of the forecasts for the two different α values and explain the forecasting with respect to the actual demand.

Period (t)	Actual Demand	$\alpha = .20$ Forecast	$\alpha = .50$ Forecast
1	42 — starting forecast	—	—
2	40	42	42
3	43		
4	40		
5	41		

(5 Marks)

Part C

Answer **both** the questions. **Each** question carries **fifteen** marks.   (2Qx15M=30M)

9. The inventory manager has been asked to make a detailed cost analysis of the Jaymart's top–selling products, "All-Bright Soap", for this study. The following data is given to you. 20,000 cases of the order were placed annually. Annual inventory holding cost is 10% of the inventory. Cost of one case of All-Bright Soap is $10.00. It costs Jaymart $20.00 to place an order, regardless of the quantity requested in the order. There are 200 working days at the supplier plant. With this information develop the total cost model. If Q is the order quantity of cases in a year, the average inventory is Q/2 and if D is the annual demand fixed at the supplier side. In the context of the Inventory Model for Economic Order Quantity, write the Total Cost Model and the Estimate of Q0 or the Economic Order Quantity.
   1) First, write the equation for the total cost model.
   2) Estimate the optimal quantity or Q_0 for the EOQ model.
   3) Calculate the total cost using the optimal quantity Q_0.
   4) How many orders does Jaymart make to its supplier in a year?
   5) Given 200 working days for the supplier, estimate the cycle time or time between orders.

(15 Marks)

10.

An ABC analysis needs to be performed for a company. Table shows all parts stored by an electrical wholesaler. The 10 stored items vary in terms of both their usage per year and cost per item as shown. The total usage value per year is $38,250. Do the ABC analysis and decide the cut off for Class A, B and C items.

Part Number	Unit Usage	Unit Cost $	Annual $ Usage	% of Total Value	Cumulative %
P1	1100	2			
P2	600	40			
P3	100	4			
P4	1300	1			
P5	100	60			
P6	10	25			
P7	100	2			
P8	1500	2			
P9	200	2			
P10	500	1			
Total					

(15 Marks)