

Presidency University, Bengaluru  
School of Management

II Semester 2015-2016 Comprehensive

Course: MBA A 104 Production  
and Operations Management

( Closed Book)

Max Marks: 80

Max Time: 3 Hours

Weightage: 40 %

23 May 2016

Set A

**Part – A**

**(10 X 2 = 20 Marks)**

**Answer all the questions**

1. Define operations management?
2. What are the elements in an operating strategy?
3. List any two software's used in forecasting?
4. What are the sources of product innovation?
5. What do you mean by facility layout?
6. List some Material-Handling Equipment?
7. Define component reliability?
8. What are the characteristics of a project?
9. What is a supply chain?
10. What are the considerations in make-or-buy decision?

**Part – B**

**(6 X 5 = 30 Marks)**

**Answer all the questions**

11. Explain, using examples, factors affecting today's global business conditions?
12. Explain, using examples, the different qualitative forecasting methods?
13. Good Eats Cafe is about to build a new restaurant. An architect has developed three building designs, each with a different seating capacity. Good Eats estimates that the average number of customers per hour will be 100, 120, or 140 with respective probabilities of 0.5, 0.2, and 0.3. The payoff table showing the profits for the three designs is given below:

	Average number of customers per hour		
	C1 = 100	C2 = 120	C3 = 140
Design A	24,000	28,000	32,000
Design B	19,000	24,000	21,500
Design C	11,500	19,500	24,500

Calculate the expected value for each decision using a decision tree analysis.

14. In order for a certain molded part to be considered acceptable, the molding process must be conducted within a limited range of temperature. The lower limit is  $455^{\circ}$  and the upper limit is  $465^{\circ}$ . Three molding machines being considered are A, B, and C with

standard deviations of  $S_A = 2.50$ ,  $S_B = 1.25$ , and  $S_C = 1.75$ . Which of these machines are capable of producing the part in accordance with the temperature requirements?

15. Explain, using suitable illustration, the purchasing process?

16. Explain, using suitable examples, how projects are planned, scheduled and controlled?

**Part – C**

**(2 X 15 = 30 Marks)**

**Answer all the questions**

17. A small hospital is planning for future needs in its maternity wing. The data below show the number of births in each of the past eight years.

Year	Births	Year	Births
1	565	5	615
2	590	6	611
3	583	7	610
4	597	8	623

- Use simple linear regression to forecast the annual number of births for each of the next three years.
  - Determine the correlation coefficient for the data and interpret its meaning.
  - Find the coefficient of determination for the data and interpret its meaning.
18. The time to perform each task and the tasks that must immediately precede are shown below:

Tasks	Tasks that immediately precede	Time to perform task (Minutes)
A	-	0.25
B	A	0.08
C	B	0.12
D	B	0.17
E	C, D	0.06
F	E	0.05
G	E	0.09
H	E	0.11
I	F, G, H	0.16
J	I	0.08

If 150 products are needed per hour and 50 minutes per hour are productive.

- Draw the precedence diagram ( 3 Marks)
- Compute the cycle time per unit in minutes. ( 3 Marks)
- Compute the minimum number of workstations required. ( 3 Marks)
- Use incremental utilization method to balance the production line. (6 Marks).

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Presidency University, Bengaluru  
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II Semester 2015-2016 Test 2

Course: **MBA A 104 Production  
and Operations Management**

( Closed Book)

Max Marks: 50

Max Time: 50 Min

Weightage: 25 %

25 Apr 2016

Set A

Part – A

(5 X 2 = 10 Marks)

Answer all the questions

1. Illustrate the different stages in a product life cycle?
2. Give the formulae for calculating coefficient of correlation?
3. List the major factors affecting process designs?
4. What are the two general approaches to expanding long range capacity?
5. List down some equipment used for material handling?

Part – B

(4 X 5 = 20 Marks)

Answer all the questions

6. Explain pure positioning strategy and mixed positioning strategy. Give examples.
7. Annual exports (in lakhs) of LED TVs manufactured by a company for overseas market for the past six years are shown below. Given the decline in exports, forecast the expected number of units to be exported next year.

Year	Exports	Year	Exports
1	10	4	6.5
2	8.5	5	5.5
3	7	6	4.5

8. Explain the three types of process design, using suitable examples and illustrations?
9. Good Eats Cafe is about to build a new restaurant. An architect has developed three building designs, each with a different seating capacity. Good Eats estimates that the average number of customers per hour will be 100, 120, or 140 with respective probabilities of 0.5, 0.2, and 0.3. The payoff table showing the profits for the three designs is given below:

	Average number of customers per hour		
	C1 = 100	C2 = 120	C3 = 140
<b>Design A</b>	24,000	28,000	32,000
<b>Design B</b>	19,000	24,000	21,500
<b>Design C</b>	11,500	19,500	24,500

Calculate the expected value for each decision using a decision tree analysis.

10. Explain, any two basic layout forms? Give their characteristics.

Part – C  
 (2 X 10 = 20 Marks)  
 Answer all the questions

11. Bob is owner of Holiday Candle Company and would like to expand his company's operations. For the past two years Bob has sold candles via the Internet, but sales have steadily grown beyond his ability to produce the candles alone from his garage workshop. Because future sales growth looks very promising, Bob has decided to open a small manufacturing plant to produce the candles. Sales have primarily been to customers in the India with occasional orders from other Countries. In addition to selling via Internet, Bob would like to start selling his candles to specialty stores in India. With the new plant, he would also like to consider expanding the products he offers in the near future.
- a. Discuss what you think should be Bob's Competitive priorities? (5 Marks)
  - b. Discuss different aspects of operations strategy that you think Bob needs to develop? (5 Marks)

12. The time to perform each task and the tasks that must immediately precede are shown below:

Tasks	Tasks that immediately precede	Time to perform task (Minutes)
A	-	0.25
B	A	0.08
C	B	0.12
D	B	0.17
E	C, D	0.06
F	E	0.05
G	E	0.09
H	E	0.11
I	F, G, H	0.16
J	I	0.08

If 150 products are needed per hour and 50 minutes per hour are productive.

- a. Draw the precedence diagram ( 1 Marks)
- b. Compute the cycle time per unit in minutes. ( 2 Marks)
- c. Compute the minimum number of workstations required. ( 2 Marks)
- d. Use incremental utilization method to balance the production line. (5 Marks).

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Presidency University, Bengaluru  
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II Semester 2015-2016 Test 1

Course: **MBA A 104 Production  
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( Closed Book)

Max Marks: 30

Max Time: 50 Min

Weightage: 15 %

8 Feb 2016

Set A

**Q 1. Answer the following in short**

**( 5Q x 1M=5M)**

1. Define operations management?
2. Brief the significant contribution of F.W. Taylor to Scientific Management?
3. When did Hawthorne studies happen and what was its significant finding?
4. Draw a production system model?
5. Give example of an operating decision for a factory and an university?

**Q 2. Briefly answer the following**

**(3Q x 5M = 15M)**

1. Explain when and why did industrial Revolution happen?
2. Explain the various historical milestones in POM using suitable illustration?
3. How computer revolution contributed to developments in operations management?

**Q 3 Explain, using examples various decisions made in operations management? (10 M)**

Presidency University, Bengaluru  
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II Semester 2015-2016 Test 1 (m/u)

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Max Marks: 30 Max Time: 50 Min Weightage: 15 %

17/2/16  
8 Feb 2016

Set B

**Q 1. Answer the following in short**

( 5Q x 1M=5M)

1. What is a strategic decision? Give example
2. What is a production system?
3. List down some entry level jobs in operations management?
4. What is meant by the term service revolution?
5. What are the indirect outputs of a production system?

**Q 2. Briefly answer the following**

(3Q x 5M = 15M)

1. What are the characteristics of operations research? To what extent are OR techniques used today?
2. Elaborate on the factors affecting operations management today?
3. What was Henry ford's approach to mass production?

**Q 3. Explain, using suitable illustrations, a production system model? Give three examples for productions systems**

(10 M)