



Name :
Roll No. :
Invigilator's Signature :

CS/MBA (N)/SEM-2 (FT)/MB-204/2012

2012

PRODUCTION & OPERATIONS MANAGEMENT

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct answers for any *ten* of the following :

10 × 1 = 10

- i) If annual requirement is 1200 number of items, ordering cost is Rs. 20 per order and EOQ=15, then the annual procurement cost is
- a) Rs. 2400 b) Rs. 1600
c) Rs. 1800 d) Rs. 20.
- ii) Which of the following material handling equipment operates on affixed path ?
- a) Lift truck b) Belt conveyer
c) Hand trolley d) Pallet.

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- iii) The periodic monitoring and analysis of equipment conditions to predict future equipment performance is practised under
 - a) Proactive Maintenance
 - b) Preventive Maintenance
 - c) Corrective Maintenance
 - d) None of these.
- iv) 'Work Measurement' is done for
 - a) determining the standard time
 - b) streamlining the method
 - c) ensuring higher productivity.
- v) Batch Production follows
 - a) Product type layout b) Process type layout
 - c) Fixed position layout d) Cellular layout.
- vi) The control chart which is used in a situation where fraction defectives are the criteria for acceptance or rejection is called
 - a) R-chart b) p-chart
 - c) c-chart d) np chart.
- vii) An operations manager is not likely to be involved in
 - a) the design of products and services to satisfy customers' wants and needs
 - b) the quality of products and services to satisfy customers' wants and needs
 - c) the identification of customers' wants and needs
 - d) work scheduling to meet the due dates promised to customers
 - e) forecasting sales.

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- viii) Which of the following is a function of inventory ?
- a) to decouple or separate parts of the production process
 - b) to provide a stock of goods that will provide a selection for customers
 - c) to take advantage of quantity discounts
 - d) to hedge against inflation
 - e) all of these are functions of inventory.
- ix) If demand is not uniform and constant, then stock-out risks can be controlled by
- a) increasing the EOQ
 - b) placing an extra order
 - c) raising the selling price to reduce demand
 - d) adding safety stock.
- x) Which of the following statements about ABC analysis is false ?
- a) ABC analysis is based on the presumption that controlling the few most important items produces the vast majority of inventory savings.
 - b) In ABC analysis, “A” Items are tightly controlled, have accurate records, and receive regular review by major decision makers.
 - c) In ABC analysis, “C” Items have minimal records, periodic review, and simple controls.
 - d) ABC analysis is based on the presumption that all items must be tightly controlled to produce important cost savings.

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- xi) Cycle counting
- a) is a process by which inventory records are verified once a year
 - b) provides a measure of inventory accuracy
 - c) provides a measure of inventory turnover
 - d) assumes that all inventory records must be verified with the same frequency.
- xii) The implementation of JIT offers several advantages, including
- a) work-in-process increases
 - b) rework reduction
 - c) decreased profit margins
 - d) increase in variability to better respond to variable demand.

GROUP – B

(Short Answer Type Questions)

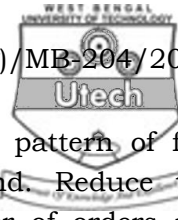
Answer any *three* of the following. $3 \times 5 = 15$

2. Explain briefly the principles used in material handling. What do you mean by MRP-II ?
3. Differentiate between P-system and Q-system of inventory control. Explain Recorder level (ROL) and safety stock.
4. What are the differences between JIT and MRP ?

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5. A company has the following procurement pattern of five items irrespective of their level of demand. Reduce the inventory levels while keeping total number of orders per year the same.

Item No.	Annual Demand (Rs.)	Number of Orders per year	Order size (Rs.)	Average Inventory
1.	1000000	4	250000	125000
2.	640000	4	160000	80000
3.	90000	4	22500	11250
4.	2500	4	625	312.5
5.	1600	4	400	200

6. Briefly state the scope of maintenance, along with types of maintenance.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. a) What are the various steps for method study ?
b) What are the differences between method study and work measurement ?
c) An 8 hour work measurement study in a plant reveals the following :
Units produced = 320 nos., Idle time is 15%.
Performance rating = 120 % of normal time. Determine the standard time per unit produced. $5 + 5 + 5$
8. a) What is the significance of critical path ? 3

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b) A small project is composed of time activities whose time estimates are given below :

Activity	A	B	C	D	E	F	G	H	I
Optimistic time	2	2	4	2	2	3	2	5	3
Most likely time	2	5	4	2	5	6	5	8	6
Pessimistic time	8	8	10	2	14	15	8	11	15

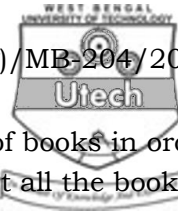
Activities A, B and C can start simultaneously. Activity D follows activity A while E follows B. Activity D and E are followed by activity G while F is dependent on C H depends on D and E, while I depends on F and G.

- i) Construct the network.
- ii) Find the expected duration and variance of each activity.
- iii) What is the critical path and expected project duration of the project ? 5 + 4 + 3

9. a) Define the term 'Sequencing Problem'.
 b) State briefly Johnson's Rule.
 c) A book binder has one printing press, one binding machine and manuscripts of seven different books. The time required for performing printing and binding operations for different books are shown below :

Book	Printing Time (days)	Binding Time (days)
1	20	25
2	90	60
3	80	75
4	20	30
5	120	90
6	15	35
7	65	50

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Decide the optimum sequence of processing of books in order to minimize the total time required to turn out all the books.

2 + 3 + 10

10. a) What is the difference in ABC analysis and FSN analysis in inventory control ? 2
- b) Develop an ABC classification for a store with the following data : 8

Item No.	Average monthly demand (units)	Price/unit (Rs.)
1	1500	20
2	8000	21
3	700	6
4	200	4
5	2000	12
6	2500	1
7	100	10
8	3000	2
9	1000	2
10	500	10

- c) Write notes on the following : 5
- i) Lead time
- ii) Legal aspect of purchasing.

11. Write short notes on any *three* : 3 × 5
- a) Differences between PERT and CPM
- b) Six Sigma
- c) Criteria of a good layout
- d) Make or buy decision
- e) Time study.