

Name :

Roll No. :

Invigilator's Signature :

CS/MBA (NEW)/SEM-3 (PT)/MB-204/2009-10

2009

PRODUCTION & OPERATION 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)**

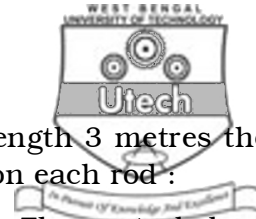
1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10
- i) Production planning and control activities are carried out to
 - a) ensure timely delivery
 - b) utilise resources effectively and economically
 - c) both of these
 - d) none of these.
 - ii) Which is *not* true in case of a good 'product layout' ?
 - a) The entire line gets immobilised if any one station is under break-down
 - b) Machine utilisation is usually very high
 - c) It is a very flexible system
 - d) It is adaptive to change.



- iii) The objective of “Plant Maintenance” is to
- a) increase the availability of the equipment and facilities
 - b) increase the utilisation of machines and equipment
 - c) upgrade machines and equipment
 - d) check defects.
- iv) The premise of Just In Time (JIT) approach is
- a) no interruption of flow in the supply chain
 - b) to have no buffer stock
 - c) not to procure material earlier than one hour
 - d) to slow down the shut-down process.
- v) Which production strategy offers quickest response time ?
- a) make-to-stock
 - b) make-to-order
 - c) design-to-order
 - d) finish-to-order.
- vi) A product is a mix of various cost elements. — From which angle ?
- a) Customer
 - b) Cost accountant
 - c) HR manager
 - d) Production manager.
- vii) One of the major objective of scheduling is
- a) meet due dates
 - b) measure the deviation from planning
 - c) estimate correct requirement
 - d) none of these.



- viii) Productivity is a measure of
- a) volume of production
 - b) speed of production
 - c) productive efficiency
 - d) annual turnover
- ix) Layout of a hospital where a patient receives a number of medical services is
- a) product layout
 - b) fixed-position layout
 - c) process layout
 - d) none of these.
- x) A line or product layout generally provides the advantages of
- a) lower levels of WIP inventories
 - b) lower material handling costs
 - c) both of these
 - d) none of these.
- xi) In locating fire-brigade service, the major criteria would be
- a) to minimise transport or travel costs of the fire engines
 - b) to minimise the response time
 - c) to maximise the utilisation of the invested facilities
 - d) to ensure availability of water.

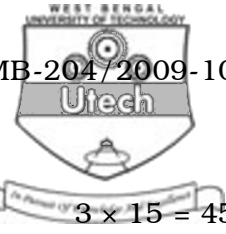


- xii) After inspection of 10 rods, each of length 3 metres the following number of defects is found on each rod :
40, 42, 48, 45, 50, 47, 51, 44, 50, 49. The control chart suitable will be
- R-chart
 - P-chart
 - C-chart
 - a combination of R-chart and P-chart.
- xiii) Which of the following is not a benefit of MRP II ?
- increase in inventory
 - better planning
 - better customer service
 - increase in productivity.

GROUP – B
(Short Answer Type Questions)

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

- Differentiate between the Q-system and the P-system of inventory management.
- State the criteria of a good 'Plant Layout'.
- Enumerate the losses due to poor maintenance of plant and equipment.
- Briefly discuss about product and process layouts.
- Explain the purchase procedure for a medium-sized engineering firm.



GROUP – C
(Long Answer Type Questions)

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

7. State with examples the challenges in application of
- JIT in an automobile manufacturing plant.
 - SQC in an international airport. 15
8. a) Briefly discuss about the motion study and time study. 4
- Explain the main steps for carrying out method study. 4
 - The observed time for a job on a gear hobbing machine is recorded to be 20 minutes. The rating of the worker is 90. The following allowances as a percentage of basic time are recommended :
- Personal need and fatigue allowances 15%
- Contingency work allowance 5%.
- Determine the basic time and standard time for the job. 7
9. a) When will you use statistical method of quality control ?
 What are its advantages ? 2 + 4
- The table below shows data for the number of defectives found in daily samples of 200 bolts for 10 consecutive days. What sort of control chart would you set up for the process ? Is the process under control ? 9

Day	1	2	3	4	5	6	7	8	9	10
No. of defects	9	4	9	11	10	8	20	4	12	22



10. a) Discuss about machine loading, scheduling and Gantt charts. 2 + 2 + 2

b) There are 5 jobs each of which must go two machines A and B in the order AB. 9

Job	1	2	3	4	5
Machine A	4	2	8	4	9
Machine B	3	5	8	7	3

Determine the sequence for 5 jobs that will minimise total elapsed time. What is the total elapsed time ?

11. a) What do you understand by EOQ ? What are the assumptions for EOQ system of inventory management and costs associated with EOQ ? 2 + 2 + 2

b) XYZ Company buys toys having annual requirement of 2000 Nos. The ordering cost per order = Rs. 180. The carrying cost per unit per annum = Rs. 18.

Find out :

- a) EOQ
- b) No. of orders to be placed per year
- c) Total annual cost. 3 + 3 + 3



12. Write short notes on any *three* of the following : 3 × 5

- a) ISO-9000
- b) Zero-defect production system
- c) VED
- d) MRP - II
- e) Jackson's method.

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