



BRAINWARE UNIVERSITY

Course – MBA

Project, Production and Operation Management (MBA 204)

(Semester – 2)

Time allotted: 3 Hours

Full Marks : 70

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group –A

(Multiple Choice Type Question)

1. Choose the correct answer from the given alternatives:

10x1=10

- i) Which of the following statements regarding time-cost trade offs in CPM networks is **true**?
- a. Crashing shortens the critical path by assigning more resources to one or more non-critical tasks.
 - b. Crashing is not possible unless there are multiple critical paths.
 - c. Crashing a project reduces the length of critical activities only.
 - d. Project crashing is not effective when applied to tasks with zero slack.
 - e. All of the above are false.
- ii) The layout strategy that deals with **low-volume, high-variety** production is
- a. fixed-position layout
 - b. retail/service layout
 - c. warehouse layout
 - d. all of the above
 - e. none of the above
- iii) The EOQ model with quantity discounts attempts to determine
- a. what is the lowest purchasing price?
 - b. whether to use fixed-quantity or fixed period order policy?
 - c. how many units should be ordered?
 - d. what is the shortest lead time?
 - e. what is the lowest amount of inventory necessary to satisfy a certain service level?
- iv) For which of the following operations would a fixed-position layout be most appropriate?
- a. assembly of an automobile
 - b. production of cameras and TV sets
 - c. construction of a ship
 - d. refining of crude oil
 - e. grocery store

- v) The type of layout which features departments or other functional groupings in which similar activities are performed is
- process
 - product
 - fixed
- vi) The most appropriate sequencing rule to use if the goal is to dynamically track the progress of jobs and establish relative priority on a common basis is
- shortest processing time
 - earliest due date
 - longest processing time
 - critical ratio
 - Johnson's rule
- vii) Which of the following statements regarding time-cost trade offs in CPM networks is **false**?
- Shortening the project duration by assigning more resources to one or more of the critical tasks is called "project crashing."
 - Crashing procedures must consider the impact of crashing an activity on all paths in the network.
 - Crashing sometimes has the reverse result of lengthening the project duration.
 - Activities not on the critical path can become critical after crashing takes place.
 - All of the above are true.
- viii) In assembly line balancing, the minimum number of workstations is
- the ratio of the sum of all task times to cycle time
 - the ratio of demand times sum of task times to production time per day
 - is always rounded upward to the next larger integer value
 - all of the above
 - none of the above
- ix) Which of the following statements is false in regards to projects?
- Projects have limited budgets.
 - Projects have life cycles.
 - On most projects, conflict does not exist.
 - Every project has some elements that are unique
- x) When a Project is under way, the following technique helps to monitor whether the Project is on schedule or not.
- Gantt Chart.
 - CPM
 - PART
 - CRT

Group – B**(Short Answer Type Question)****Answer any three Questions****3 x 5 = 15**

- 2) Define Production Planning and Control (PPC). Explain objectives, scope and elements of PPC.
- 3) Profitability of a company depends to a large extent on effectiveness of its purchase function. Discuss.
- 4) Materials requirement planning is both an inventory control and scheduling technique. Discuss.
- 5) Explain Purchase Cycle with Diagrammatic presentation
- 6) Derive EOQ equation.

Group – C**(Long Answer Type Question)****Answer any three Questions****3 x 15 = 45**

- 7) Discuss on Control Chart on Variable and Attribute Factors.

Ten Woolen Carpets were studied critically to know total number of Defects in each Sample in texture. Construct a Control Chart for the no of Defects from the following Table and comment.

Carpet No : 1 2 3 4 5 6 7 8 9 10

No. of Defects : 2 4 3 5 1 3 2 3 4 3

- 8) Explain Deterministic model for a single Inventory item where Demand remains constant over time with instantaneous replenishment without shortage.

Demand for an item per year is 50000 units, Ordering cost per order :Rs 15/, Storage cost per year: Rs 1000, Interest cost: Rs 0.06 per unit/ year, Obsolescence cost : Rs 0.04 per unit per year.

Calculate EOQ, Reorder period, No of orders per year and total Variable Cost of Inventory.

- 9) How is Standard Time calculated from Observed Time?

What are the steps for Work Measurement?

How can a Method be established from consideration of Technical, Economic and Human Factors?

10) What is your idea about ABC and VED Analysis of stock?

A company is considering Selective Inventory Control. Prepare a ABC plan for consideration of Management.

| Item | Units | Unit Cost (Rs) |
|------|-------|----------------|
| 1 | 6000 | 400 |
| 2 | 60000 | 50 |
| 3 | 17000 | 210 |
| 4 | 3000 | 600 |
| 5 | 56000 | 20 |
| 6 | 23000 | 50 |
| 7 | 27000 | 65 |
| 8 | 15000 | 40 |
| 9 | 21000 | 40 |
| 10 | 90000 | 10 |
| 11 | 30000 | 30 |
| 12 | 25000 | 50 |

11) Analysis of a Chemical Project reveals the following data.

| <u>Activity</u> | <u>Preceding activity</u> | <u>Duration (Weeks)</u> |
|-----------------|---------------------------|-------------------------|
| A | - | 1 |
| B | A | 3 |
| C | A | 4 |
| D | A | 3 |
| E | D | 2 |
| F | B,C,E | 4 |
| G | D | 9 |
| H | D | 5 |
| I | H | 2 |
| J | F,G,I | 2 |

- a) Draw the network diagram.
- b) Determine critical path and project duration.
- c) What is effect on project duration if
 - i) D is changed to 6 weeks.