

**Paper - 9 : Operations Management and
Strategic Management**

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Full Marks : 100

Time allowed: 3 hours

The figures in the margin on the right side indicate full marks.

This question paper has two sections.

Both the sections are to be answered subject to instructions given against each.

Section – I : [Operations Management]

1. (a) Choose the correct alternatives: 1×10=10

- (i) Which one of the following is not a factor in determining Economic Lot Size for manufacturing?
- (a) Production Schedule
 - (b) Usage rate
 - (c) Manufacturing Cost
 - (d) Cost of Deterioration
- (ii) Negative float signifies
- (a) Reduction in target time to finish the work in time
 - (b) Adjustment of target time to finish the work before schedule
 - (c) Reduction in target time to crash the critical path
 - (d) Adjustment of target time to maintain the most likely time of activities
- (iii) On which of the following areas ISO 9003 is applicable?
- (a) Procurement
 - (b) Production
 - (c) Installation
 - (d) Servicing
- (iv) To truly reap the benefits of TQM
- (a) Quality of production of organisation must change
 - (b) Productivity of organisation must change
 - (c) Culture of organisation must change
 - (d) Environment of organisation must change
- (v) Which one of the following is the benefit of keeping standby machines?
- (a) Requirement of Additional space
 - (b) Interest on additional capital
 - (c) Availability of Additional depreciation
 - (d) Protection against a complete shutdown

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- (vi)** Which one of the following is not a factor on which Scheduling depends?
 (a) Production Method
 (b) Production Quantity
 (c) Production Capacity
 (d) Production Site
- (vii)** Quality of conformance is
 (a) The degree to which quality of design is achieved in manufacturing
 (b) The degree to which quality of product is achieved through customer's preferences
 (c) The degree to which quality of human resources is achieved through training
 (d) The degree to which quality of assets is achieved through technological innovation
- (viii)** A public sector industry is started in a remote place. With respect to this information which one of the following is correct?
 (a) Industry follows transportation
 (b) Industry & transportation come in together
 (c) Transportation follows industry
 (d) Transportation increases mobility of industry
- (ix)** Machine time of a machine is 22 minutes. If productivity increases by 10% the new machine time is
 (a) 12
 (b) 5
 (c) 19.8
 (d) 20
- (x)** Which one of the following is Administrative Application of Linear Programming?
 (a) Application for forming financial mix strategy
 (b) Application for scheduling production
 (c) Application for finding optimal usage of resources
 (d) Application for portfolio selection

(b) Match items in column A with that in column B:

1×6=6

Column A	Column B
(a) Horizontal line of the Gantt chart	(i) Are where more than one Activity ends and from where more than one Activity starts
(b) Dummy Activities	(ii) Represent the difference between the maximum time available to finish the activity and the time required to complete it.
(c) Merger and Burst Events	(iii) Consume no time or resource & are represented by dashed arrows

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(d) Floats	(iv) Fraction from total float of an activity which can be used for rescheduling the activity without affecting the succeeding activity.
(e) Free Float	(v) Solution to Transportation problem
(f) Vogel's Approximation Method	(vi) Represents the time taken to complete an activity

(c) State whether the following statements are True/False.

1×6=6

- (i) No handling is the best handling.
- (ii) Increased productivity leads to cost reduction.
- (iii) Job evaluation is used to measure absolute job worth.
- (iv) Multiple activity chart deals with layout problems.
- (v) Training boosts employee morale.
- (vi) Production planning is an essential function in a factory.

[Answer any three questions from the following]

2. (a) What do you mean by MRP? State the objectives of MRP.
- (b) M/s Kobo Bearings Ltd., is committed to supply 24,000 bearings per annum to M/s Deluxe Fans on a steady daily basis. It is estimated that it costs 10 paisa as inventory holding cost per bearing per month and that the setup cost per run of bearing manufacture is ₹ 324.
- (i) What is the optimum run size for bearing manufacture?
 - (ii) What should be the interval between the consecutive optimum runs?
 - (iii) Find out the minimum inventory holding cost.

6+10=16

3. (a) What does Product Design do?

- (b) The processing times (t_i) in hrs for the five jobs of a single machine scheduling is given. Find the optimal sequence which will minimize the mean flow time and find the mean flow time.

Determine the sequence which will minimize the weighted mean flow time and also find the mean flow time

Job (j)	1	2	3	4	5
Processing time (t_i) hrs	30	8	10	28	16
Weight (w_j)	1	2	1	2	3

4+12=16

4. (a) Linear Programming tools can be used in Management Application – Explain.

- (b) Ladies fashion shop wishes to purchase the following quantity of summer dresses:

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Dress size	I	II	III	IV
Quantity	100	200	450	150

Three manufacturers are willing to supply dresses.

The quantities given below are the maximum that they are able to supply of any given combination of orders for dresses:

Manufacturers	A	B	C
Total quantity	150	450	250

The shop expects the profit per dress to vary with the manufacturer as given below:

	Size			
	I	II	III	IV
A	₹2.5	₹4.0	₹5.0	₹2.0
B	₹3.0	₹3.5	₹5.5	₹1.5
C	₹2.0	₹4.5	₹4.5	₹2.5

Required:

(a) Use the transportation technique to solve the problem of how the orders should be placed with the manufacturers by the fashion shop in order to maximise profit.

(b) Explain how you would know there is no further improvement possible. **6+10=16**

5. (a) Product A has a Mean Time Between Failures (MTBF) of 30 hours and has a Mean Time To Repairs (MTTR) of 5 hours. Product B has a MTBF of 40 hours and has a MTTR of 2 hours.

- (i) Which product has the higher reliability?
- (ii) Which product has greater maintainability?
- (iii) Which product has greater availability?

(b) The following activities must be accomplished in order to complete a construction project:

Activity	A	B	C	D	E	F	G	H	I	J
Time	3	8	4	2	1	7	5	6	8	9
Predecessors	—	—	AB	B	A	C	EF	DF	GH	I

- Construct a network diagram for this project. Find the CP and the duration of the project.
- Assume that you are project manager of the project mentioned above. The

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project has progressed for 10 weeks and the status is follows:

Activities completed: A, B, E. Other activities have not started as yet.

- If no managerial action is taken at all when will the project get completed?
 - What action might you take to get the project back to a schedule that can be completed by the end of week 42?
- 6+10=16**

Section – II : (Strategic Management)

6. Choose the correct answer:

1×6=6

- (i)** Price fixation for the first time takes place when:
- (a) A company develops or acquires a new product;
 - (b) Introducing existing product into a new geographic area or a new distribution channel;
 - (c) A service, the company bids for a new contract work;
 - (d) All of the above
- (ii)** Organization culture is:
- (a) Appreciation for the arts in the organization
 - (b) Ability of the organization to act in a responsible manner to its employees
 - (c) Combination of (a) and (b) above
 - (d) Deeper level of basic assumptions and beliefs that are shared by the members of the firm
 - (e) None of the above
- (iii)** What are enduring statements of purpose that distinguish one business from other similar Firms?
- (a) Policies
 - (b) Mission statements
 - (c) Objectives
 - (d) Rules
 - (e) Nature of ownership
- (iv)** The BCG growth matrix is based on the two dimensions:
- (a) Market Size and Market Share
 - (b) Market Size and Profit Margins
 - (c) Market Size and Competitive Intensity
 - (d) None of the above.
- (v)** For an entrepreneur:
- (a) Vision is before the mission
 - (b) Mission is before the vision
 - (c) Both are developed simultaneously
 - (d) Vision or mission are un-important issue

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(e) Profitability is most crucial

(vi) Directional Policy Matrix is the same as:

- (a) The BCG model;
- (b) The 9-cell GE matrix;
- (c) The Life cycle portfolio analysis;
- (d) The PIMS matrix;
- (e) The 3X3 competitive positioning matrix

[Answer any two questions from the following]

7. **(a)** Discuss in brief about the areas of attention for SWOT appraisal. State the purpose of such appraisal.
(b) What is a Company Mission? **8+4=12**
8. **(a)** Discuss about Strategic Business Units (SBU) & Core Competence. State the major reasons of using SBU approach.
(b) State the different approaches in Strategic Planning. **(4+4)+4=12**
9. **Write short notes on any three of the following:** **4x3=12**
- (a)** Strategic Planning
 - (b)** Marketing Mix
 - (c)** Participative Management
 - (d)** Types of firms/organisations for which BPR can be applied