

**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) This process is used when higher volumes of more standardised goods or services are needed. This process is
- (a) Batch process
  - (b) Continuous process
  - (c) Repetitive process
  - (d) Job shop process
- (ii) Which of the following is not a method for solving Assignment problem?
- (a) Complete Enumeration method
  - (b) Hungarian method
  - (c) Simplex method
  - (d) Natural method
- (iii) The objective of application of linear programming in industrial problems is
- (a) to determine a plan for production and procurement in the time period under consideration
  - (b) to determine an optimal solution of the problem under the given constraints
  - (c) to determine the cost effective solution of the problem under scarce resources
  - (d) to determine a plan for time based solution to the problem for increasing productivity
- (iv) Sustainable competitive advantage in the market place can be achieved through
- (a) Line Balancing
  - (b) JIT manufacturing
  - (c) Cellular manufacturing
  - (d) Batch production
- (v) Multiple shift operation enhances
- (a) Firm's Capacity utilisation
  - (b) Demand for firm's product
  - (c) Firm's labour turnover
  - (d) Firm's channel conflict

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- (vi) In a linear programming model feasible solution is
- (a) The basic solution to the general L.P. problem
  - (b) Any solution that also satisfies the non-negative restrictions of the general L.P. problem
  - (c) A solution which optimize (maximize or minimize) the objective function of a general L. P. problem
  - (d) A basic solution to the system of equation if one or more of the basic variables become equal to zero.
- (vii) It is the basis for decisions regarding capacity planning, facilities (or plant) layout, equipment and design of work systems. This is
- (a) Process Design
  - (b) Process Planning
  - (c) Process Strategy
  - (d) Process Selection
- (viii) Which one of the following is not a Sequencing rule for single facility?
- (a) SSRO
  - (b) DSRO
  - (c) MDD
  - (d) LFT
- (ix) The most obvious reason for product design is
- (a) To offer new products to sustain in the market
  - (b) To offer new products to fulfill changing preferences of customers
  - (c) To offer new products to remain competitive in the market
  - (d) To offer new products to cope with changing regulations in the market
- (x) Operations management is concerned essentially with the utilization of resources. Utilisation of resources means
- (a) Obtaining maximum effect from resources
  - (b) Minimizing loss of resources,
  - (c) Minimising under utilization or waste of resources
  - (d) All the above

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

**1×6=6**

Column A	Column B
(a) Degenerate	(i) Process Strategy
(b) Bottleneck	(ii) Job allocation
(c) Repetitive Focus	(iii) Line Balancing
(d) Improved Matrix	(iv) Linear Programming
(e) Cycle time	(v) Manufacturing Resource Planning
(f) MRP II	(vi) Layout

**(c) State whether the following statements are True/False. 1×6=6**

1. The life cycle of a product has many points of similarity with the human life cycle.
2. The Linear Programming problem has two basic parts: the objective function and the constraint set.
3. The most widely used index of productivity is to work out the output per machine-hour.
4. The productivity is a measure of how much input is required to achieve a given output.
5. One of the limitations of Gantt Chart is that it does not clearly indicate the details regarding progress of activities.
6. Preventive maintenance ensures greater safety to workers.

**[Answer any three questions from the following]**

2. **(a)** What do you mean by 'Capacity Planning'? Discuss in brief the types of Capacity Planning.

**(b)** A department works on 8 hours shift, 250 days a year and has the usage data of a machine, as given below:

Product	Annual demand (units)	Processing time (standard time in hours)
X	300	4.0
Y	400	6.0
Z	500	3.0

Determine the number of machines required. **8+8=16**

3. **(a)** State in brief about Process Design & Selection.

**(b)** The Taj service station has a central store where service mechanics arrive to take spare parts for the jobs they work upon. The mechanics wait in queue if necessary and are served on a first come first served basis. The store is manned by one attendant who can attend 10 mechanics in an hour on an average. The arrival rate of the mechanics averages 6 per hour. Assuming that the pattern of mechanics' arrivals is Poisson distribution and the servicing time is exponentially distributed, determine  $W_s$ ,  $W_q$  &  $L_q$ , where the symbols vary their usual meaning. **6+10=16**

4. **(a)** A captain of a cricket team has to allot five middle batting positions to five batsmen. The average runs scored by each batsman at these positions are as follows:

Batting Position
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	III	IV	V	VI	VII	
Batsmen	A	40	40	35	25	50
	B	42	30	16	25	27
	C	50	48	40	60	50
	D	20	19	20	18	25
	E	58	60	59	55	53

Make the assignment so that the expected total average runs scored by these batsmen are maximum.

- (b) Wanda's Car Wash & dry is an automatic, five-minute operation with a single bay. On a typical Saturday morning, cars arrive at a mean rate of eight per hour, with arrivals tending to follow a Poisson distribution. Find
- The average number of cars in line.
  - The average time cars spend in line and service.
- 10+6=16**

5. (a) State the differences between PERT & CPM.

- (b) A Public transport system is experiencing the following number of breakdowns for months over the past 2 years in their new fleet of vehicles:

Number of breakdowns	0	1	2	3	4
Number of months this occurred	2	8	10	3	1

Each break down costs the firm an average of ₹ 2,800. For a cost of ₹ 1,500 per month, preventive maintenance can be carried out to limit the breakdowns to an average of one per month. Which policy is suitable for the firm? **6+10=16**

### Section – II : (Strategic Management)

6. Choose the correct answer from the given alternatives: **1×6=6**

- (i) Mckinsey's 7-s framework consists of:
- Structure, strategy, software, skills, styles, staff and supervision
  - Structure, strategy, systems, skills, styles, syndication and shared values
  - Structure, strategy, systems, skill, steering power, styles and shared values.
  - Structure, strategy, staff, skills, systems, shared values, super ordinate goal.
  - None of the above.
- (ii) A strategic business unit (SBU) is defined as a division of an organization:

- (a) That help in the marketing operation
  - (b) That enable managers to have better control over the resources
  - (c) That help in the choice of technology
  - (d) That help in the allocation of scarce resources
  - (e) That help in identifying talents and potentials of people
- (iii)** Intensity of competition is \_\_\_\_\_ in low return industries.
- (a) Law
  - (b) Non - existent
  - (c) High
  - (d) Not important
  - (e) Dependant on industry nature
- (iv)** Ansoff proposed that for filling the corporate planning gap, one follows four strategies namely.
- (a) Market penetration, product differentiation, market identification and diversification
  - (b) Market penetration, product development, market identification and diversification
  - (c) Market penetration, product development, market development and diversification
  - (d) Market identification, product development, positioning and diversification
  - (e) Differentiation, product innovation, market opportunity and diversification
- (v)** For an actress in Bollywood, her pretty face would a/an
- (a) Asset
  - (b) Strategic asset
  - (c) Core competency
  - (d) Capability
  - (e) All of the above
- (vi)** Corporation vision' is the same as
- (a) Corporate dream
  - (b) Corporate mission
  - (c) Corporate goal
  - (d) Corporate strategy

**[Answer any two questions from the following]**

7. **(a)** State the relationship between 'Strategy' & 'Competitive Advantage'.
- (b)** What do you mean by 'Strategic Management'? Why Strategic Management is important? **6+6=12**

8. (a) What do you mean by 'A strategic vision'?

(b) State the benefits of having a Vision?

**6+6=12**

9. **Write short notes on any three of the following:**

**4x3=12**

(a) Environmental Analysis

(b) Boston Matrix

(c) Market Penetration Strategy

(d) Business Process Re-engineering.