

**Paper 9 – Operation Management  
& Strategic Management**

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Full Marks: 100

Time allowed: 3 hours

**Section – A**

**I. Answer all:**

1. Given below are two lists – list 'A' containing 11 abbreviations and list 'B' containing various functional areas associated with production management. Expand and abbreviations and match them with the corresponding functional areas: [10×1=10]

List 'A'	List 'B'
LP	Capacity planning
PERT	Quality control
MTM	Project funding
VA	Project viability checking
SRAC	Inventory management
MRP	Product design
CBA	Cost control
CAD	Product mix determination
IFCI	Project planning
AOQ	Work measurement

2. Choose the word or phrase which would be appropriate to full up the blanks in each statement: [5×1=5]

- (i) Statistical analysis is used to determine the optimum policy of \_\_\_\_\_ maintenance.
- (ii) General purpose machine are less prone to \_\_\_\_\_.
- (iii) Factor Comparison is a method of \_\_\_\_\_.
- (iv) Ergonomics is another name for \_\_\_\_\_.
- (v) Gantt chart is used for \_\_\_\_\_ control.

3. Put an appropriate word in blank position: [4×1=4]

- (i) \_\_\_\_\_ systems replace human beings to read data from products and documents and interpret the data.
- (ii) The user's expectation method of \_\_\_\_\_ provides a subjective feel of the market.
- (iii) \_\_\_\_\_ control is typically found wherever a particular bottleneck machine exist in the process of manufacturing.
- (iv) General purpose machines are less prone to \_\_\_\_\_.

- II. Answer any three:** [17×3=51]

4. (a) Identify the factors that influence the Product Design. [5]  
(b) Requests for maintenance service made upon a centralised maintenance facility have been simulated for a typical 8 hour shift with arrival and service pattern as shown below:

Request arrival (clock) time	Repair service time
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1:30	60 mins.
2:00	20 mins.
4:15	45 mins.
4:30	120 mins.
5:30	30 mins.
7:00	10 mins.

The labour cost of maintenance crew is ₹40 per hour whether working or idle. The waiting time of operators and machinery that has broken-down is costed at ₹70 per hour.

- Find the idle time cost of the machinery facility.
- Find the waiting time cost of operators and machinery (not including repair time).
- Find the total facility idle time and machinery waiting time cost.
- Assuming that for an additional cost of ₹10 per hour the maintenance centre could add another crew and decrease the repair time by one third, would the additional cost be justified? [7]

(c) Explain the term Process Planning. [5]

5. (a) The following table gives the running cost per year and resale value of a certain equipment whose purchase price is ₹6,500. At what year is the replacement due optimally? [9]

Year	1	2	3	4	5	6	7	8
Running cost (₹)	1,400	1,500	1,700	2,000	2,400	2,800	3,300	3,900
Resale value (₹)	4,000	3,000	2,200	1,700	1,300	1,000	1,000	1,000

(b) What are the various technical factors involved in the decision for replacement of machine and equipment? [8]

6. (a) Two alternatives set-ups, A and B are available for the manufacture of a component on a particular machine, where the operating cost per hour is ₹20.

Particulars	Setup A	Setup B
Components / Setup	4000 pieces	3000 pieces
Setup cost / Year	₹300	₹1500
Production rate / hour	10 pieces	15 pieces

Which of these set-ups should be used for long range and economic production? [9]

(b) Monthly demand for a component is 1000 units. Setting-up cost per batch is ₹120. Cost of manufacture per unit is ₹20. Rate of interest may be considered at 10% p.a. calculate the EBQ. [8]

7. (a) Ladies fashion shop wishes to purchase the following quantity of summer dresses:

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

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

	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 manufactures by the fashion shop is order to maximise profit.
- (b) Explain how you know there is no further improvement possible. **[9]**
- (b) Wanda's Car Wash & Cry is an automatic, five-minute operation with a single bay. One a typical Saturday morning, cars arrive at a mean rate of eight per hour, with arrivals tending a follow a passion distribution. Find
- The average number of cars in line.
  - The average time cars spend in line and service. **[8]**

**8. Write a note:**

**[5+5+7=17]**

- Difference between PERT and CPM;
- Lean operation;
- Elements of scheduling.

### Section – B:

#### Strategic Management

**III. Answer all:**

**9. Choose the correct answer:**

**[6×1=6]**

- (i) A strategic business unit (SUB) is defined as a division of an organization:
- That help in the marketing operation;
  - That enable managers to have better control over the resources;
  - That help in the choice of technology;
  - That help in the allocation of scarce resources;
  - That help in identifying talents and potentials of people.
- (ii) Innovation strategy is:
- defensive strategy
  - offensive strategy
  - responding to or anticipating customer and market demands
  - guerrilla strategy
  - harvesting strategy
- (iii) What are enduring statements of purpose that distinguish one business from other similar Firms?
- Policies;
  - Mission statements;
  - Objectives;
  - Rules;
  - Nature of ownership.

- (iv) 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.
- (v) A product line is a group of products that
- (a) are closely related
  - (b) are marketed through the same channel
  - (c) perform a similar function for being sold to the same customers
  - (d) all the above
- (vi) The strategy which concentrates around a production market is:
- (a) Vertical Integration
  - (b) Niche
  - (c) Horizontal Expansion
  - (d) Diversification

**IV. Answer any three:**

**[8×3=24]**

- 10. (a)** Discuss "Strategic Management Framework".
- (b)** What do you mean by Strategic Planning? What are the difference between Strategic Management and Strategic Planning?
- (c)** Discuss the stages in Strategic Planning.
- (d)** Bring out the features and advantages of Strategic Business Unit (SBU).