Operations Management and Strategic Management

Time Allowed: 3 Hours

Full Marks: 100

The figures in the margin on the right side indicate full marks.
This paper contains two Sections.
Both Sections are compulsory, subject to instructions provided against each.
All workings must form part of your answer.
Assumptions, if any, must be clearly indicated.

Section A

Operations Management

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

   (i) Which one of the following recent trends in Production/Operations management involves drastic measures or break through improvements to improve the performance of a firm?

   (A) Corporate Downsizing

   (B) Re-Engineering .

   (C) Technology

   (D) TQM

   (ii) The starting point of Production cycle is

   (A) Product design

   (B) Production planning

   (C) Routing

   (D) Market research .

   (iii) Which of the following process types is used when a very highly standardized product is desired in high volumes?

   (A) Repetitive Process

   (B) Batch Process

   (C) Project Process

   (D) Continuous Process ›

(iv) Which of the following aims at finding the best and most efficient way of using the available resources—men, materials, money and machinery?

(A) Method Study

(B) Work Study •

(C) Time Study

(D) Motion Study

(v) Generally the size of the order for production in Job production is

(A) small •

(B) large

(C) medium

(D) very large

(vi) Which one of the following statements is NOT correct?

(A) LFT is calculated from the LFT of the head event.

(B) Slack can be calculated by adding EFT and LFT of any job. •

(C) EFT is the sum of the EST and the time of duration for any event.

(D) The Total Project time is the shortest possible time required in completing the project.

(vii) Which one of the following is NOT the advantage of Preventive Maintenance?

(A) Better product quality

(B) Greater safety to workers

(C) Increased breakdowns and downtime •

(D) Fewer large-scale repairs

(viii) Which one of the following establishes time sequence of operations?

(A) Routing

(B) Sequencing

(C) Scheduling

(D) Dispatching

(ix) MRP stands for

(A) Material Requirement Planning •

(B) Material Reordering Planning

(C) Material Requisition Procedure

(D) Material Recording Procedure

(x) With reference to Aggregate Planning, identify which of the following statements is NOT correct?

(A) It is an Intermediate-term planning.

(B) It is made operational through a master schedule, that gives the manufacturing schedule.

(C) Facility planning and scheduling are closely related with the aggregate planning.

(D) It deals with the strategic decisions, such as purchase of facilities, introduction of new products, processes, etc.

(b) Match Column A with Column B: 1×6=6

Column A	Column B
(A) Any place in a production process where materials tend to pile up or produced at rates of speed less rapid than the previous or subsequent operations	(i) Assignment
(B) It is used when a low volume of high variety goods are needed	(ii) Globalisation
(C) A special Linear Programming Problem	(iii) Bottleneck
(D) Steep increase in the level of competition among manufacturing firms throughout the world	(iv) Maintenance Request
(E) Systematic Quantitative structural approach to the problem of managing a project through to successful completion	(v) Job-Shop Process
(F) This must be made in writing to a central point in the organization	(vi) Network Analysis

(c) State whether the following statements are 'True' or 'False':   1×6=6

(i) Short-term forecasting is useful to serve the purpose of estimating the inventory requirement.

(ii) The life cycle of a product has many points of similarity with the human life cycle.

(iii) The Linear Programming problem has two basic parts: the objective function and the constraint set.

(iv) The most widely used index of productivity is to work out the output per machine-hour.

(v) PERT is designed for repetitive projects, whereas CPM is suitable for non-repetitive projects.

(vi) Wear and obsolescence are two main causes for replacement of machinery in every aspect of life.

Answer *any three* questions from the following: 16×3=48

2. (a) Explain the concept of Operating System in order to have a clear idea of Operations Management.

(b) With the help of following data, project the trend of sales for the next 5 years: 6+10=16

Years	2002	2003	2004	2005	2006	2007
Sales in Lakhs of Rupees	120	130	135	140	150	165

3. (a) What are the various activities and responsibilities of product design?

(b) Describe the objectives of Production Planning and Control. 6+10=16

4. (a) Find initial Feasible Solution by North-West Corner method.

	W1	W2	W3	W4	SUPPLIES
F1	47	59	55	57	150
F2	44	54	52	59	270
F3	49	64	59	61	370
F4	51	63	54	60	230
DEMAND	210	330	260	220	

W_j-> Warehouse

F_i-> Factory, and

Cell entries are unit costs.

(b) A departmental store is running a snack items selling outlet. Past data of snack items' demand per week in hundred kgs with frequency is given below:

Demand/Week	0	6	12	18	24	30
Frequency	3	10	9	20	6	2

Using the following sequence of random numbers, generate the demand for next 10 weeks. Also find out the average demand per week.

Random Numbers	21	34	48	97	72	31	45	56
	47	37	82	44	67	75	63	

6+(8+2)=16

5. (a) Draw the network for the following activities and find the critical path and total duration of the project.

Activity	Duration(months)
1–2	3
2–3	4
2–4	5
2–5	6
3–4	3
3–6	5
4–6	7
5–6	4
6–7	5

(b) An automotive firm is using a machine whose purchase price is ₹ 18,000.

The Installation charges amount to ₹ 3,800 and the machine has a scrap value of only ₹ 1,800 because the firm has a monopoly of this type of work. The maintenance cost in various years is given in the following table:

Year	1	2	3	4	5	6	7	8	9
Maintenance cost (₹)	250	720	1200	1700	2300	3200	4300	4800	6300

The firm wants to determine after how many years should the machine be replaced on economic considerations, assuming that the machine replacement can be done only at the year end.

(2×3)+10=16

Section B

Strategic Management

6. Choose the correct answer: 1×6=6

(i) A corporate strategy can be defined as

(A) A list of actions about operational planning and statement of organisation structure and control system.

(B) A statement of how to compete, direction of growth and method of assessing environment.

(C) Abatement of organisation's activities and allocation of resources.

(D) A course of action or choice of alternatives, specifying the resources required to achieve certain stated objectives.

(ii) The existence of price-wars in the airline industry in India indicates that

   (A) customers are relatively weak because of the high switching costs created by frequent flyer programmes.

   (B) the industry is moving towards differentiation of services.

   (C) the competitive rivalry in the industry is severe.

   (D) the economic segment of the external environment has shifted, but the airline strategies have not changed.

(iii) Business Process Re-engineering is

   (A) eliminating loss-making process.

   (B) redesigning operational processes.

   (C) redesigning the product and services.

   (D) recruiting the process engineers.

(iv) Which one or more of the following are appropriate as a judicious mix for a Product line, which is a group of products?

   (A) That are closely related.

   (B) That are marketed through the same channel.

   (C) That perform a similar function for being sold to the same customers.

   (D) All of the above

(v) The Product Market matrix comprising of Strategies of Market Penetration, Market Development, Product Development, and Diversification was first formulated by

   (A) Ansoff

   (B) Drucker

   (C) Porter

   (D) Prahlad

(vi) 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

Answer *any two* questions from the following:

12×2=24

7. (a) 'There are primarily three levels of strategies in the organisation'. List the three levels. Build up one or two meaningful sentences to clarify the role of each level.

   (b) What is meant by SWOT analysis?

   8+4=12

8. (a) Categorise seven-steps process of Contingency Planning.

   (b) How does Matrix Organisation Structure differ from SBU Structure? Analyse related advantages and disadvantages of Matrix Organisation Structure.

   6+6=12

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

   4×3=12

   (a) Corporate Planning

   (b) Definition of the terms 'Re-engineering' and 'Process' in Business Process Re-engineering

   (c) Stages of Strategic Management Framework

   (d) Steps involved in the formulation of production strategy

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