Paper 9- Operation Management & 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 paper contains five questions.
All questions are compulsory, subject to instruction provided against each questions.
All workings must form a part of your answer.
Assumptions, if any, must be clearly indicated.

Section A

I.   Answer all the following questions.   [20×1 = 20]

  (a) Multiple choice questions:

    (i)   Scheduling shows:
      (A) Production Programme,
      (B) Plant Layout,
      (C) Product Mix,
      (D) Manufacturing sequence.

    (ii) The first stage of Production Control is:
      (A) Dispatching,
      (B) Scheduling,
      (C) Routing,
      (D) Triggering of production operations and observing the progress and record the deviation.

    (iii) Routing and Scheduling becomes relatively complicated in
      (A) Job production
      (B) Batch production
      (C) Flow production
      (D) Mass production

    (iv) The starting point of production cycle is:
      (A) Product design,
      (B) Production Planning,
      (C) Routing,
      (D) Market Research.

    (v) Final stage of production planning, where production activities are coordinated and projected on a time scale is known as:
      (A) Scheduling,
      (B) Loading,
      (C) Expediting,
      (D) Routing.

(b) Match the following: [7×1 = 7]

	Column A		Column B
1.	Cloth	A	Assembly Line
2.	Car	B	Smithy
3.	Cotton Yarn	C	Spinning Mill
4.	Forgings	D	Power Loom
5.	Electricity	E	Blast Furnace
6.	Petrol	F	Generator
7.	Iron	G	Refinery

(C) Answer the following queries: [7×1 = 7]

(i) Can the shaping machine be considered a versatile machine took?

(ii) Does the Factories Act in India allow the employment of women in all industries?

(iii) Is Break-even analysis a management tool?

(iv) Is Activity Sampling a technique of Job Evaluation?

(v) Do standard Times allow for relaxation of the Operators?

(vi) Is a lift same as an elevator?

(vii) Is the use of metric system of weights and measures compulsory in India?

2. Answer any three of the following: [17×3=51]

(a) (i) 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 position are as follows:

Batsmen		III	IV	V	VI	VII
	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

Batting Position

Make the assignment so that the expected total average runs scored by these batsmen are maximum. [8]

(ii) Customers arrive at a bakery at an average rate of 16 per hour on weekday morning. The arrival distribution can be described by a passion distribution with a mean of 16. Each clerk can serve a customer in an average of three minutes; this time can be described by an exponential distribution with a mean of 3.0 minutes.

a. What are the arrival and service rates.

b. compute the average number of customers being served at any time.

c. Suppose it has been determined that the average number of customers waiting in line is 3.2. Compute the average number of customers in the system (i.e., waiting in line or being served), the average time customers wait in line, and the average time in the system.

Determine the system utilization for M = 1, 2 and 3 servers. [2+2+2+3=9]

(b) (i) A project consists of seven activities. Activities P, Q, R run simultaneously. The relationships among the various activities is as follows:

Activity	Immediate Successor
P	S
Q	T
R	U

Activity "V" is the last operation of the project and it is also immediate successor to S, T and U. Draw the network project.

(ii) What do you mean by scheduling? Discuss the principles of Scheduling? [4+8=12]

(c) Write a note: [5+5+7=17]
   (i) JIT;
   (ii) Advantages of Preventive Maintenance;
   (iii) Factors affecting industrial productivity.

(d) (i) An investigation into the use of scooters in 5 towns has resulted in the following data: population in town.

Population in town (in lakhs)	(X)	4	6	7	10	13
No. of scooters	(Y)	4,400	6,600	5,700	8,000	10,300

Fit a linear regression of Y on X and estimate the number of scooters to be found in a town with a population of 16 lakhs.   [10]

(ii) What do you mean by capacity planning? What are the factors influencing effective capacity?   [2+5=7]

(e) (i) The monthly requirement of raw material for a company is 3,000 units. The carrying cost is estimated to be 20% of the purchase price per unit, in addition to ₹2 per unit. The purchase price of raw material is ₹ 20 per unit. The ordering cost is ₹25 per order.
   (a) Your are required to find EOQ.
   (b) What is the total cost when company gets a concession of 5% on the purchase price if it orders 3,000 units or more but less than 6,000 units per month.
   (c) What happens when the company gets a concession of 10% on the purchase price when it orders 6,000 units or more?
   (d) Which of the above three ways of orders the company should adopt?
                                                                                  [3+3+4+2=12]
   (ii) What are the objectives of product designing?   [5]

Section – B

3. Answer all The questions:

(a) Choose the correct answer: [6×1=6]

(i) Offensive strategy is a strategy:
   (a) For small companies that consider offensive attacks in the market.
   (b) For those companies that search for new inventory opportunities to create competitive advantage.
   (c) For the market leader who should attack the competitor by introducing new products that make existing one obsolete.
   (d) For those companies who are strong in the market but no leaders and might capture a market share.
   (e) None of the above.

(ii) A company's actual strategy is
   (a) mostly hidden to outside view and is known only to top-level mangers
   (b) typically planned well in advance and usually deviates little from the planned set of actions and business approaches because of the risks of making on-the-spot changes.
   (c) Partly proactive and partly reactive to changing circumstances
   (d) Mostly a function of the strategies being used by rival companies (particularly those companies that are industry leaders)

(iii) The product-market matrix comprising of strategies of Penetration, Market product development and Diversification was first formulated by
   (a) Ansoff
   (b) Drucker
   (c) Porter
   (d) Prahlad

(iv) Business Process Re-engineering is
   (a) Eliminating loss-making process;
   (b) Redesigning operational process;
   (c) Redesigning the product and services;
   (d) Recruiting the process engineers.

(v) Strategic analysis is concerned with stating the position of the organization in terms of:
   (a) Mission, choice of market segments, product selection, financial targets, external appraisal;
   (b) Mission, goals, corporate appraisal, position audit and gap analysis;
   (c) Mission goals, identification of key competitors, SWOT and environmental appraisal;
   (d) Mission, targeted ROI, manpower planning, position audit;
   (e) Mission, SWOT, competitive strategies, stakeholders position and institutional goal.

(vi) Mckinsey's 7-s framework consists of:

(a) Structure, strategy, software, skills, styles, staff and supervision.

(b) Structure, strategy, systems, skills, styles, syndication and shared values.

(c) Structure, strategy, systems, skills, steering power, styles and shared values.

(d) Structure, strategy, staff, skills, systems, shared values, super ordinate goal.

(e) None of the above.

4. Answer any three: [8×3=24]

(i) Discuss "SWOT" Analysis;

(ii) Write a note on Business Process Re-engineering.

(iii) Discuss the advantages of Strategic Management;

(iv) Write a note on Formulation of Organizational Mission;