

Paper 9 – Operations 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 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 most correct alternatives: [1×10=10]
- (i) The activity of specifying when to start the job and when to end the job is known as:
 - (A) Planning,
 - (B) Scheduling,
 - (C) Timing,
 - (D) Follow-up.

 - (ii) In an organization, the Production Planning and Control department comes under
 - (A) Planning department,
 - (B) Manufacturing department,
 - (C) personnel department,
 - (D) R&D department

 - (iii) In Production by service, the product undergoes the changes in:
 - (a) Shape and size of the surface,
 - (b) Shape of the surface only,
 - (c) Size of the surface only,
 - (d) Chemical and Mechanical properties.

 - (iv) Which of the following stages of Product Life cycle does attribute beginning of substantial increase in Sales and Profits?
 - (A) Introduction
 - (B) Growth
 - (C) Maturity
 - (D) Decline

 - (v) In an organisation the production planning and control department comes under:
 - (a) Planning department,
 - (b) Manufacturing department,
 - (c) Personal department,
 - (d) R & D department.

 - (vi) Reliability and per unit cost of which of the following spares are less?
 - (a) Regular spares
 - (b) Insurance spares
 - (c) Capital spares
 - (d) Rotable spares

 - (vii) Issuing necessary orders, and taking necessary steps to ensure that the time targets set in the schedules are effectively achieved is known as:
 - (a) Routing,
 - (b) Dispatching,
 - (c) Scheduling,
 - (d) Inspection.

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(viii) Preventive maintenance is useful in reducing:

- (a) Inspection Cost,
- (b) Shutdown Cost,
- (c) Cost of pre-mature replacement,
- (d) Set-up cost of machine

(ix) Which one is NOT an index of productivity?

- (a) Man-hour output
- (b) Productivity ratio
- (c) TQM
- (d) Use of Financial Ratios

(x) Which of the following stages of Product Life Cycle does attribute beginning of substantial increase in Sales and Profits?

- (a) Introduction.
- (b) Growth.
- (c) Maturity.
- (d) Decline.

(b) Match the terms in Column I with the relevant terms in Column II

[1×5=5]

Column I	Column II
(A) Inventory Control	(i) Turbo-Alternator
(B) Network Analysis	(ii) Crashing
(C) Aviation Fuel	(iii) Value Analysis
(D) Hydro-electricity	(iv) Stock Level
(E) Improvement in productivity	(v) Refinery

(c) State whether the following statements are True or False?

[1×6=6]

- (i) A Productivity Index is a device of expressing the ratio between outputs and the inputs of the resources numerically. ()
- (ii) It is desirable to conduct work measurement after method study. ()
- (iii) Increase in productivity leads to retrenchment of work force. ()
- (iv) The term "aesthetics" which appeals to the human sense does not add value to the product. ()
- (v) In general short term forecasting will be more useful in production planning. ()
- (vi) Production planning and control is essentially concerned with the control of finished goods. ()

2. (a) What are the characteristics of modern operation function?

[6]

(b) (i) A workshop operates on 2 shifts of 8 hours per day. It has 10 machines. It works for 5 days in a week. Machine utilization is 90% and the efficiency of the machines is 85%. Calculate the designed/rated capacity of the workshop in standard hours.

(ii) An assembly line of an item A has the following output in a 10 week period:

Week No	Standard hours produced
1	350
2	375
3	380
4	400
5	300
6	325
7	340
8	370
9	390
10	350

Calculate the demonstrated capacity of the assembly line per week.

[10]

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3. (a) Linear Programming tools can be used in Management Application - Explain. [6]

(b) Solve the following assignment problem and obtain the minimum cost at which all the jobs can be performed.

Machinist	Job (Cost in '00 Rs.)				
	1	2	3	4	5
A	25	18	32	20	21
B	34	25	21	12	17
C	20	17	20	32	16
D	20	28	20	16	27

[10]

4. (a) The following jobs have to be shipped a week from now (week has 5 working days)

Job	A	B	C	D	E	F
Number of day's work remaining	2	4	7	6	5	3

Sequence the jobs according to priority established by (a) least slack rule (b) critical ratio rule. [8]

(b) A company manufactures around 150 mopeds. The daily production varies from 146 to 154 depending upon the availability of raw materials and other working conditions.

Production per day	Probability
146	0.04
147	0.09
148	0.12
149	0.14
150	0.11
151	0.10
152	0.20
153	0.12
154	0.08

The finished mopeds are transported in a specially arranged lorry accommodating only 150 mopeds. Using following random numbers 80, 81, 76, 75, 64, 43, 18, 26, 10, 12, 65, 68, 69, 61, 57, simulate the process to find out:

(i) What will be the average number of mopeds waiting in the factory?

(ii) What will be the average number of empty spaces on the lorry? [8]

5. (a) Project with the following data is to be implemented. Draw the network and find the critical path.

Activity	Predecessor	Duration (days)	Cost (day)(Rs.)
A	--	2	50
B	--	4	50
C	A	1	40
D	B	2	100
E	A, B	3	100
F	E	2	60

[8]

(i) What is the minimum duration of the project?

(ii) Draw a Gantt chart for early start schedule.

(iii) Determine the peak requirement money and day on which it occurs above schedule.

- (b) Assume that at a bank teller window the customers arrive in their cars at the average rate of twenty per hour according to a poisson distribution. Assume also that the bank teller spends an average of two minutes per customer to complete a service, and the service time is exponentially distributed. Customers, who arrive from an infinite population, are served on a first-come-first served basis, and there is no limit to possible queue length.
- (i) What is the expected waiting time in the system per customer?
 - (ii) What is the mean number of customers waiting in the system?
 - (iii) What is the probability of zero customers in the system?
 - (iv) What value is the utilization factor?
- [8]

Section – II: (Strategic Management)

6. Choose the correct answer from the given alternatives: [1×6=6]
- (i) Successful 'differential strategy' allows a company to
 - (A) Gain buyer loyalty to its brands
 - (B) Charge too high a price premium
 - (C) Have product quality that exceeds buyers' needs
 - (D) Depend only on intrinsic product attributes.
 - (ii) For an actor in Bollywood, his outstanding performance would be a /an
 - (A) Asset
 - (B) Strategic Asset
 - (C) Core competency
 - (D) Capability.
 - (iii) A Strategic Business Unit (SBU) is defined as a division of an organization:
 - (A) That help in the marketing operations
 - (B) That enable managers to have better control over the resources
 - (C) The 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
 - (iv) Intensity of competition is _____ in low return industries
 - (A) low.
 - (B) non-existent.
 - (C) high.
 - (D) not important dependent on industry nature.
 - (v) The strategy of the TATA group in India could be viewed as a good example of
 - (A) Conglomerate diversification
 - (B) Market development
 - (C) Cost Leadership
 - (D) Concentric diversification
 - (vi) Blue Ocean Strategy is concerned with
 - (A) moving into new market with new products
 - (B) creating a new market places where there is no competition
 - (C) developments of products and markets in order to ensure survival
 - (D) making the product unique in terms of attributes

Answer any one question form the following:

7. (a) Discuss about "Product Development Strategy".
- (b) Enlist the advantage of strategic Management.

[6+6]

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8. (a) What are the areas to keep in mind while framing strategy to motivate employees?
(b) Discuss about "Types of Strategic Control System". [6+6]
9. Write short notes on any three of the following four questions: [4×3=12]
- (a) Strategic Management Framework;
(b) Mc Kinsey's 7 –s Frame work;
(c) Marketing Mix;
(d) Theory X and Theory Y.