PC-2816/ML

X-1/2051

OPERATIONS MANAGEMENT–206

(Semester–II)

Time : Three Hours]   [Maximum Marks : 50

Note : Attempt *four* more questions (7½ marks each) from Group I and Group II selecting not more than *two* questions from each Group. Group III is compulsory (5 marks each).

GROUP–I

I.   What is the strategic perspective of operation management? What is the role of advanced manufacturing technology in the formulation of operations strategy? Describe competitive priorities.

II.   Differentiate between product layout and process layout on the basis of (1) Initial-investment cost (2) Cycle time (3) Type of machines used (4) Skill of labour required (5) Inventory levels (6) Arrangement of machines.

III. (a)   What are the objectives of a Locational Analysis? What are the techniques available for locational analysis?

(b) A manufacturer of farm equipment is considering three locations A, B, and C for a new plant. Cost studies show that fixed cost per year at the sites are Rs. 2,40,000, Rs. 2,70,000, and Rs. 2,52,000, respectively. Variable costs are Rs. 100 per unit, Rs. 90 per unit, and Rs. 95 per unit, respectively. If the plant is designed to have an effective system capacity of 2,500 units per year and is expected to operate at 80% efficiency, what is the most economical location on the basis of actual output?

IV. There are seven jobs, each of which has to go through the machines A and B in the order AB. Processing time (in hours) are given as under :

Job :	1	2	3	4	5	6	7
Machine A :	3	12	15	6	10	11	9
Machine B :	8	10	10	6	12	1	3

Determine the sequence of these jobs that will minimise the total elapsed time. Also calculate the various idle times.

GROUP–II

V. What is acceptance sampling? Point out the role of the operating characteristics curve. Also describe the different types of sampling plans.

VI. (a) Differentiate between Quality control and Quality assurance.

   (b) Explain the role of selective inventory control.

   (c) What is ABC analysis? Explain the steps in doing ABC analysis.

VII. (a) What is economic order quantity? Determine the economic order quantity for the company that faces an annual demand of 2,000 units. It costs the company Rs. 1,000 for every order placed and Rs. 250 per unit of the product. It faces a carrying cost of 10% of a unit cost. What is the economic order quantity?

   (b) Explain EOQ Problem with one price break.

VIII. The data for a project has as under :

Activity	Preceding Activity	Time (in Weeks)		Cost (in Rupees)	
		Normal	Crash	Normal	Crash
A	–	3	2	18000	19000
B	–	8	6	600	1000
C	B	6	4	10000	12000
D	B	5	2	4000	10000
E	A	13	10	3000	9000
F	A	4	4	15000	15000
G	F	2	1	1200	1400
H	C, E, G	6	4	3500	4500
I	F	2	1	7000	8000

Draw a project network and find the critical path.

GROUP–III

IX. (a) Explain 'Fixed Order Quantity System of Inventory'.

(b) Why is Inventory required? Provide reasons. Also explains what problem we face because of excessive Inventory.

(c) Why are Assembly line important in mass production? Explain with the help of appropriate example Line - Balancing of assembly operations.

(d) List the qualitative methods of forecasting and indicate their advantages and disadvantages.

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