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Eighth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Operations Management

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART - A

- 1 a. Explain with schematic model the main functions of business organization and role of operations management. (05 Marks)
- b. Distinguish between manufacturing and service organization. (05 Marks)
- c. Classify production systems and explain with examples. (05 Marks)
- d. Define productivity. What are the factors affecting productivity? (05 Marks)

- 2 a. Explain steps in decision making process. (06 Marks)
- b. Jindal steels limited is planning to start a new factory for manufacturing steel utensils. It is considering three location options namely, Bangalore, Shimoga and Bellary. The fixed cost at these locations have been estimated at ₹ 81,50,000, ₹ 73,77,000 and ₹ 79,03,000 respectively. The variable cost at the three locations are estimated at ₹ 500 per unit, ₹ 580 per unit and ₹ 490 per unit respectively. The factory will have an annual production capacity of 10,000 steel utensils and in the initial years it will operate at 75% efficiency. Find the best location option, which has the lowest total cost of production. (06 Marks)

- c. The values of a pay-off table are:

	New Bridge	No New Bridge
A	1	14
B	2	10
C	4	6

Determine the choice to make under maximin and Laplace strategies. (08 Marks)

- 3 a. What is forecasting? List the steps involved in forecasting process. (05 Marks)
- b. List the elements of good forecasting technique. (05 Marks)
- c. A car manufacturing firm finds a relation of sales of car and index of demand for a car. Sales for the past five years are given in the table below. Find the relation between the demand index and sale of car by least square of linear regression. Further make a forecast for the sixth year assuming the index of demand is 210. (10 Marks)

Year	1	2	3	4	5
Sales	110	130	150	160	180
Demand index	100	110	140	150	200

- 4 a. What are the determinants of capacity? (04 Marks)
- b. Explain various factors that influence the location of the plants. (05 Marks)
- c. What is facility layout? Sketch and explain product and process layout. (05 Marks)
- d. ISRO is considering expansion of the existing facility by adding 1 ton capacity of curing furnace for manufacturing solid propellant. Each batch of 1 ton propellant must undergo 30 minutes of furnace time, including loading and unloading operations. Due to power restrictions, furnace is used only 80 percent of time. In a shift of 8 hours the required output is to be 16 tons. If the plant system estimated is 40% of system capacity determine the number of furnaces required. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

