

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA - SEMESTER - II EXAMINATION – WINTER • 2014

Subject Code: 2820006

Date: 02-01-2015

Subject Name: Production & Operations Management (POM)

Time: 02:30 pm - 05:30 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is meant by the expressions *order winners* and *order qualifiers*? What was the order winner(s) for your last major purchase of a product or service? **07**
- (b) Define operations management. Describe input-transformation-output relationship in an automobile factory, a restaurant, hospital, and a College. **07**

- Q.2** (a) What is Inventory? What is the purpose of Inventory in an organization? Describe the various cost associated with the Inventory analysis and their functional relationship to each other. **07**
- (b) Demand for an item is 1,000 units per year. Each order placed costs Rs. 10; the annual cost to carry items in inventory is Rs. 2 each. **07**
- a) In what quantities should the item be ordered?
- b) Supposing a Rs. 100 discount on each order is given if orders are placed in quantities of 500 or more. Should orders be placed in quantities of 500, or should you stick to the decision you made in Part a?

OR

- (b) Write a short note on ISO-9000 series. **07**
- Q.3** (a) What do you understand by facility Location? If you want to set up a Chemical manufacturing plant anywhere in Gujarat, what are the factors which you will consider to choose the location for your plant explain in detail? **07**
- (b) Schedule the following activities using CPM: **07**

Activity	Immediate Predecessor	Time (Weeks)
A	-	1
B	A	4
C	A	3
D	B	2
E	C, D	5
F	D	2
G	F	2
H	E, G	3

- a) Draw the network
- b) What is the critical path?
- c) How many weeks will it take to complete the project?
- d) Which activities have slack, and how much?

OR

- Q.3** (a) Discuss the types of processes. What are the merits and demerits of each? Give an example of each. **07**
- (b) Distinguish between CPM and PERT. **07**
- Q.4** (a) What do you mean by TQM? Explain various tools associated with Quality Management. **07**
- (b) A particular raw material is available to a company at three different prices, **07**

depending on the size of the order as given below in table. The cost to place an order is Rs.40. Annual demand is 3,000 units. Holding cost is 25% of the material price. What is the economic order quantity to buy each time?

Quantity range	Cost (C)
Less than 100 pounds	Rs20 per pound
100 to 1000 pounds	Rs19 per pound
More than 1,000 pounds	Rs18 per pound

OR

- Q.4 (a) What do you mean by JIT? Explain basic elements of JIT. 07
- (b) ABC Company packages potato chips in bags. The net weight of the chips in each bag is designed to be 9 oz, with a tolerance of +/- 0.5 oz. The packaging process results in bags with an average net weight of 8.80 oz and a standard deviation of 0.12 oz. The company wants to determine if the process is capable of meeting design specifications according to process capability ratio (C_p) and process capability index (C_{px}). 07
- Q.5 (a) What do you understand by Operations Scheduling? What are the problems faced in the absence of proper scheduling? 07
- (b) What are the assumptions of the basic EOQ Model? Distinguish between a fixed-order- quantity system and fixed-time-period system. 07

OR

- Q.5 (a) What is Plant layout? List the various types of Plant layout. Carry out a comparative analysis product and process layout with an example. 07
- (b) Twenty samples of $n = 200$ were taken by an operator at a workstation in a production process. The numbers of defective items in each sample were recorded as follows. Management wants to develop a p-chart using 3-sigma limit. Calculate the UCL and LCL for the p-chart. 07

Sample	Number of Defectives	P
1	12	0.060
2	18	0.090
3	10	0.050
4	14	0.070
5	16	0.080
6	19	0.095
7	17	0.085
8	12	0.060
9	11	0.055
10	14	0.070
11	16	0.080
12	14	0.070
13	12	0.060
14	16	0.080
15	18	0.090
16	20	0.100
17	18	0.090
18	20	0.100
19	21	0.105
20	22	0.110
