

GUJARAT TECHNOLOGICAL UNIVERSITY

SEMESTER– 2 EXAMINATION – WINTER 2012

Subject code: 2820006

Date: 10/01/2013

Subject Name: Production & Operations Management (POM)

Time: 10:30 – 13:30

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) A chemical manufacturing company wants to expand its operations by establishing a plant in Gujarat. Please suggest a location for company and discuss advantages and disadvantages related with the suggested location. **07**
- (b) Define Just in Time (JIT). Explain basic elements of JIT **07**
- Q.2** (a) ABC Co. Ltd. Purchases 3,000 pens a year from its supplier. The ordering cost is Rs. 10 per order and the Carrying Cost is Rs. 6 per unit per year. The company has 300 working days per year. For the given data find: **07**
1. EOQ
 2. No. of orders per year
 3. Total inventory cost
 4. No. of inventory cycles in a year
 5. The duration of inventory cycle
- (b) What is aggregate production planning? What is the purpose of doing it? **07**
- OR**
- (b) Explain the types of manufacturing process in brief. **07**
- Q.3** (a) Discuss types of Plant Layout with suitable examples. **07**
- (b) Why is Forecasting important? Discuss types of Forecasting. **07**
- OR**
- Q.3** (a) Write in detail about production planning and control. **07**
- (b) Explain the MRP System in detail with inputs of MRP. **07**
- Q.4** (a) What is Six – Sigma? Write steps for implementing six – sigma. **07**
- (b) Consider the following data. **07**

Activity	Predecessor	Duration (Months)
A	-	2
B	-	3
C	-	4
D	A	1
E	B	2
F	B	5
G	C	7
H	D,E	2
I	F,G	3
J	H,I	1

Find:

1. Draw Network Diagram (Activity on Arrow)
2. Find Critical path and its duration
3. Find Earliest Start & Earliest Finish times and Latest Start and Latest Finish Times for each activity.

OR

- Q.4 (a)** What is supply chain management? How it is important for organization? **07**
- Q.4 (b)** Consider the following table representing processing time (in hours). Check whether Johnson's Rule can be applied. Sequence the jobs. **07**

Job	M1	M2	M3	M4
A	3	1	4	12
B	8	0	5	15
C	11	3	8	10
D	4	7	3	8
E	5	5	1	10
F	10	2	0	13
G	2	5	6	9

Find:

1. Overall Processing time
2. Total Waiting time for jobs
3. Total Waiting time for each machines

- Q.5 (a)** Write a note on contribution of Juran and Crosby in the field of quality. **07**
- (b)** Define quality and discuss dimensions of it. **07**

OR

- Q.5 (a)** Write a note on International Organization for Standardization (ISO). **07**
- (b)** Write a note on statistical quality control. **07**
