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 **07**
by establishing a plant in Gujarat. Please suggest a location for
company and discuss advantages and disadvantages related with
the suggested location.

(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 **07**
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:
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 **07**
doing it?
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**

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