

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MBA - SEMESTER-II • EXAMINATION – SUMMER 2013**

**Subject Code: 2820006**

**Date: 24-05-2013**

**Subject Name: Production and Operations Management**

**Time: 10:30am – 01:30pm**

**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)** Suppose you are working as a turnkey project consultant. One of your clients wants guidance in selecting facility location for his new fast-food restaurant. Guide your client. **07**
- (b)** Operations management is a transformation process. Support this statement with examples if you agree with it. **07**
- Q.2 (a)** The time to perform each task and immediate predecessor of the tasks are as follows: **07**

<i>Task</i>	<i>Immediate Predecessor</i>	<i>Time (Min.)</i>
A	--	0.25
B	A	0.08
C	B	0.12
D	B	0.17
E	C,D	0.06
F	E	0.05
G	E	0.09
H	E	0.11
I	F,G,H	0.16
J	I	0.08

From this assembly line 150 units are needed per hour and 50 min. per hour are productive. Draw the network diagram, compute desired cycle time and balance the line with minimum number of work stations. What is the efficiency of this line?

- (b)** Describe Flexible Manufacturing System. How does it differ from a cellular layout? **07**
- OR**
- (b)** Discuss material handling principles. **07**
- Q.3 (a)** Write a note on Aggregate Production Planning. **07**

- (b) A trader Purchases and sells a particular type of pen. The expected annual sales are 8000 units. The ordering cost is Rs. 180 per order and holding cost is 10% of the average inventory value. The pens can be purchased according to the following Schedule: 07

Lot Size	Unit Price (Rs.)
01 ó 999	22.00
1000 ó 1499	20.00
1500 ó 1900	19.00
2000 and above	18.50

Determine the best order size for the trader.

**OR**

- Q.3 (a)** Discuss ABC method of inventory management. 07  
**(b)** Briefly discuss various method of job scheduling for n-jobs on one machine. 07

- Q.4 (a)** Discuss the differences between PERT and CPM. 04

- (b)** A project contains the following activities with possible time duration in days: 10

Activity	Activity Description	Optimistic time	Most Likely time	Pessimistic time
1-2	Select the computer model	4	6	8
2-3	Design input/output system	5	7	15
2-4	Design monitoring system	4	8	12
3-6	Assemble computer hardware	15	20	25
3-5	Develop the main programs	10	18	26
4-6	Develop input/output routines	8	9	16
5-7	Create data base	4	8	12
6-7	Install the system	1	2	3
7-8	Test & implement	6	7	8

- (a) Construct the arrow diagram for this problem, determine the critical path & state the expected project completion time.  
 (b) Determine the probability that the project will be completed in 50 days.  
 (c) If the company wants to be 95% sure that the system will be installed by a certain due date, how many days prior to that should it start the work?

**OR**

- Q.4 (a)** Briefly discuss safety management. 04

- Q.4 (b)** What do you understand by Quality and Quality management? Briefly discuss various product quality dimensions. 10

- Q.5 (a)** Depict your understanding for 'Just in Time' manufacturing system. **07**
- (b)** Write a note on 'Production Planning and Control (PPC)'. **07**
- OR**
- Q.5 (a)** What is Acceptance sampling in bulk production process? Also discuss the concept of Producers' risk and consumers' risk. **07**
- (b)** What is ISO certification series? Discuss. **07**

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