Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 2715005 **Date: 09-01-2015**

Subject Name: Prodcution and Operations Management

Time: 02:30 pm - 05:00 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)** Describe the various stages involved in satisfying a customerôs need. Which of these stages form a part of production & operations management? **07**

(b) What is capacity planning? What are the alternative sources of capacity? **07**

Q.2 **(a)** Write a short note on JIT? **07**

(b) Explain concept of computer process planning and also discuss benefits of CAPP. **07**

OR

(b) What is replacement? Describe some important replacement situations & replacement policies. **07**

Q.3 **(a)** Distinguish between Aggregate planning & Master production scheduling. **07**

(b) Enlist various advanced forecasting methods. And Explain different forecasting errors. **07**

OR

Q.3 **(a)** What do you understand by a queue? Give some important applications of queuing theory. **07**

(b) Explain Box Zerkins method of forecasting with suitable example. **07**

Q.4 **(a)** Define the use of float in leveling resources. **07**

(b) A project consists of seven activities as given in table. **07**

Activity	Optimistic time	Most likely time	Pessimistic time
1-2	1	1	7
1-3	1	4	7
1-4	2	4	8
2-5	1	1	1
3-5	2	5	14
4-6	2	5	8
5-6	3	6	15

Draw the project network. What is the expected duration of the project? What is the probability that the project will be completed at least 3 weeks earlier than expected?

OR

Q.4 **(a)** Define a simulation model? Distinguish between deterministic & stochastic simulation models. **07**

(b) A maintenance project has following estimate s of times in hours and cost in rupees for jobs. Assuming that jobs can be done either at normal or at fast pace, **07**

but not any pace in between. Assuming a relationship between the job duration and job cost and with overhead cost of Rs. 25/- per hours, find the optimal duration and optimal cost.

Activity	Predecessor	Normal		Crash	
		Time (Hrs.)	Cost (Rs.)	Time (Hrs.)	Cost (Rs.)
A	-	8	80	6	100
B	A	7	40	4	94
C	A	12	100	5	184
D	A	9	70	5	102
E	B,C,D	6	50	6	50

Q.5 **(a)** What are the steps involved in implementing ERP? **07**

(b) What is the role of MPS in MRP? **07**

OR

Q.5 **(a)** Write a short note on Group technology. **07**

(b) Distinguish between MRP, Closed loop MRP and MRP-II. **07**

****