Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– 7th • EXAMINATION – SUMMER 2015

Subject Code: 171501 **Date: 01/05/2015**

Subject Name: Operations Planning & Control

Time:02.30pm-05.00pm **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)** Define OPC. Explain production planning procedure for any organization. **07**

(b) Discuss types of production, deciding the nature of PPC functions in that kind of industry. Describe complexity of PPC function in job order production. **07**

Q.2 **(a)** Discuss a composite production system. Justify production planning as core to productivity of business. **07**

(b) What is process planning ? Explain the information generated as a result of process planning. **07**

OR

(b) Discuss master production scheduling, with aggregate planning as its input predecessor. **07**

Q.3 **(a)** What is sales forecasting ? What are the elements of good sales forecasting method ? List various methods of sales forecasting. **07**

(b) Fit a straight line trend by method of least square's from the following and find the trend values. Also find the expected value for 2013. **07**

Year	2008	2009	2010	2011	2012
Production (Thousands)	38	56	77	82	45

OR

Q.3 **(a)** Define regression. Why are there two regression lines in general ? **07**

(b) Following data refer to cases of malaria in a city : **07**

Year	2005	2006	2007	2008	2009	2010	2011	2012
No. of cases (In'000)	0.67	0.73	0.82	0.82	0.90	1.14	1.43	1.51

Calculate :

(i) Moving average values for 2008, 2009 and 2010.

(ii) 5 years moving average forecast for next year.

Q.4 **(a)** What is scheduling ? Explain scope of scheduling with example. **07**

(b) Use Johnson's rule to find out the best sequence and find total idle time form the following data : **07**

Job	1	2	3	4	5	6
Milling M/c	1	5	4	2	2	4
Drilling M/c	3	1	5	2	7	3

OR

Q.4 **(a)** Discuss MRP and its four fundamental inputs. **07**

(b) Osaka Corporation has assembly section, which has following details : **07**

Working time /shift = 400 min, Production Target/Shift = 1600

Activity	A	B	C	D	E	F	G	H	I	J	K	L	M
Element Time (Sec.)	7	6	9	5	16	8	7	4	4	5	6	8	5
Immediate Predecessor activity	-	-	-	-	A	C	D	F,G	D	E	J,H & I	J,H & I	K,L

Find out :

(i) Cycle time

(ii) Min. no. of work stations

(iii)Line efficiency.

Q.5 **(a)** What is the objective of Line of Balance (LOB) technique ? Explain the stages of LOB technique and its application. **07**

(b) What is "Index"? Under which condition the Index method of scheduling to be applied ? Why ? **07**

OR

Q.5 **(a)** Write note on : EOQ for manufacturing and purchasing. **07**

(b) Write note on : Capacity planning & control. **07**

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