GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019

Subject Code: 2171501   **Date: 23/11/2019**

Subject Name: Operations Planning & Control

Time: 10:30 AM TO 01:00 PM   **Total Marks: 70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	**(a)**	What do you understand by Operations Planning & Control?	**03**
	(b)	Explain the scope of OPC.	**04**
	(c)	Discuss principal functions of OPC.	**07**
Q.2	**(a)**	What is process planning?	**03**
	(b)	Explain in short about Computer Integrated Manufacturing (CIM).	**04**
	(c)	Discuss salient distinguishing features of production planning for Batch, Continuous, and Job production.	**07**

OR

Q.2 (c) What is 'Route sheet'? State how it differs from 'Operation sheet' of an engineering component. Also explain its significance for PPC. **07**

Q.3 (a) What is sales forecasting? **03**

(b) What do you understand by the term 'Economic mfg. quantity' (EMQ)? **04**

(c) Use method of least squares to fit a straight line trend using following data, and find trend values. Also find expected values for year 2018 : **07**

Year	2013	2014	2015	2016	2017
Sales (Rs in Crores)	36	49	61	77	68

OR

Q.3 (a) What is dispatching? **03**

(b) What are the elements of good sales forecasting method? **04**

(c) An engineering company uses a special type of pin at an approximately constant rate of 5000 units per year. The pins are manufactured at the company's own plant. Each pin costs the company Rs. 80. The setup cost per production run is Rs. 1600. The inventory carrying charges are estimated at 20% of the average inventory investment. **07**

What quantity of pins should be manufactured in each production run for minimum cost? Also find out the frequency of production runs to be made.

Q.4 (a) Define Job sequencing and also scheduling. **03**

(b) Discuss in short about MRP. **04**

(c) The sequence of manufacturing a product is as follows; **07**

Find out minimum no. of work stations and line efficiency:

Operation	A	B	C	D	E	F	G	H
Time (In Min.)	4	8	9	5	3	6	22	7

OR

Q.4 (a) What is assembly line balancing? **03**

(b) Explain the scope and importance of scheduling for any organization. **04**

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

Job	1	2	3	4	5	6
Lathe	4	7	5	10	12	8
Shaping	5	8	4	9	7	6

Q.5 **(a)** What is Aggregate planning? **03**

(b) State the application of Gantt chart and Machine load chart. **04**

(c) Discuss modern day MPC system, its different inputs and outputs. **07**

OR

Q.5 **(a)** What is master production scheduling? **03**

(b) Discuss capacity planning with an example. **04**

(c) Construct a MPS record for 8 week time horizon. Inventory on hand in first week is 10 units, MPS is 10 units for first 4 weeks, and 5 units for subsequent 4 weeks. Show inventory requirement (Production requirement) and discuss inventory build-up. **07**

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