

Code No: **RT42031**
**R13**
**Set No. 1**
**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018**
**PRODUCTION PLANNING AND CONTROL**

(Common to Mechanical Engineering and Mining Engineering)

**Time: 3 hours**
**Max. Marks: 70**
*Question paper consists of Part-A and Part-B*
*Answer ALL sub questions from Part-A*
*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) Define production planning and control. [3]
- b) Write the types of forecasting. [4]
- c) What are the limitations of JIT? [4]
- d) Define scheduling. [3]
- e) Write about expediting. [4]
- f) Write the various activities of dispatcher. [4]

**PART-B (3x16 = 48 Marks)**

2. a) Explain various elements of Production Control. [8]
- b) List out the planning functions and controlling functions separately, explain them briefly. [8]
3. a) Using the exponential smoothing technique, Compute the forecasts from the following data (time series) under the situations when  $\alpha = 0.7$ . Compute the forecast for the 11<sup>th</sup> period? [8]

Month	1	2	3	4	5	6	7	8	9	10
Demand	28	30	32	31	27	26	30	33	32	31

- b) A comparison of monthly sales of expensive item, against the total number of visits made by a salesman during the previous month, yields the following data. Is the correlation of the two variables good enough to enable the number of visits, to be adopted as an efficient indicator of future sales? [8]

Sales	1	3	5	7	11
Visits	2	4	8	9	10

4. a) What are the advantages of inventory control? What are the symptoms of poor inventory control [8]
- b) Explain the scope of ERP and difficulties in implementation. [8]
5. a) Distinguish between loading and scheduling. [8]
- b) Describe different operation sheets and explain how routing procedure can be prepared from them. [8]
6. a) Explain the standard scheduling methods in detail. [8]
- b) What is the purpose of aggregate planning? Explain in detail. [8]
7. a) Describe dispatching control in intermittent production and continuous production. [8]
- b) Explain the role of computers in carrying various functions of PPC. [8]

Code No: **RT42031****R13****Set No. 2****IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018****PRODUCTION PLANNING AND CONTROL****(Common to Mechanical Engineering and Mining Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B***\*\*\*\*\*****PART-A (22 Marks)**

1. a) Write the scope of production planning and control. [4]  
b) Define forecasting. [3]  
c) What are the benefits of JIT? [4]  
d) Write the applications of routing. [4]  
e) Enumerate the main purpose of scheduling in brief. [4]  
f) Define the term follow up. [3]

**PART-B (3x16 = 48 Marks)**

2. a) Describe the different types of production systems. [8]  
b) Explain about functions of production systems. [8]
3. a) Using the exponential smoothing technique, Compute the forecasts from the following data (time series) under the situations when  $\alpha = 0.3$ . Compute the forecast for the 11<sup>th</sup> period?  

Month	1	2	3	4	5	6	7	8	9	10
Demand	28	30	32	31	27	26	30	33	32	31

 [10]  
b) Explain the general principles of forecasting techniques. [6]
4. a) Explain various costs associated with inventory. [8]  
b) Explain the inputs and outputs of the MRP system. [8]
5. a) Explain the concept of Bill of materials in detail. [8]  
b) Explain the general procedure involved in preparing route sheet. [8]
6. a) Compare and contrast different scheduling policies. [8]  
b) Explain the various controlling aspects of production in detail. [8]
7. a) Write the applications of computer in production planning and control. [8]  
b) What are typical advantages and disadvantages of dispatching with decentralized control? [8]

Code No: **RT42031**
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**Set No. 3**
**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018**
**PRODUCTION PLANNING AND CONTROL**

(Common to Mechanical Engineering and Mining Engineering)

**Time: 3 hours**
**Max. Marks: 70**
*Question paper consists of Part-A and Part-B*
*Answer ALL sub questions from Part-A*
*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) Write the applications and examples for mass production. [4]
- b) Write the uses of forecasting. [4]
- c) Write about MRP-II. [4]
- d) Define routing. [3]
- e) Why scheduling is essential? [4]
- f) Write the importance of dispatching on time. [3]

**PART-B (3x16 = 48 Marks)**

2. a) What are the activities in control phase of PPC? Explain in brief. [8]
- b) What are the objectives for which PPC department is established in a factory system? [8]

3. a) Find the MAD (Mean Absolute Deviation) and MSE (Mean Square Error) for the following forecast.

Period	1	2	3	4	5	6	7	8	9	10	11	12
Actual Demand	97	93	110	98	130	133	129	138	136	124	139	125
Forecasted Demand	100	100	100	100	102	104	106	108	110	112	114	116

- b) Difference between qualitative and quantitative methods. [8]
4. a) Explain the various functions of inventory management. [8]
- b) Explain P and Q systems of controlling the inventories with neat diagrams. [8]
5. a) What are the important factors that affecting routing procedure. [8]
- b) Define route sheet? What is the information it contains? Explain it by drawing a route sheet. [8]
6. a) Explain about the scheduling techniques in detail. [8]
- b) Explain the concept of Line Balancing in detail. [8]
7. a) What is material follow up? What is the role of purchase department in material follow up. [8]
- b) Explain advantages & disadvantages of dispatching – centralized control. [8]

Code No: **RT42031****R13****Set No. 4****IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018****PRODUCTION PLANNING AND CONTROL****(Common to Mechanical Engineering and Mining Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) Write the applications and examples for batch shop production. [4]
- b) Write the importance of forecasting. [3]
- c) Write about MRP-I. [4]
- d) Write the applications of scheduling. [4]
- e) Mention the significance of expediting for production planning. [4]
- f) Define dispatching. [3]

**PART-B (3x16 = 48 Marks)**

2. a) With the help of an organization chart explain how PPC department can carry out its functions. [8]
- b) Explain the importance of PPC department in a typical production system. [8]
3. a) Fit the linear regression model for the following data and forecast the demand for the period 9. [8]

Period	1	2	3	4	5	6	7	8
Demand	750	820	840	820	840	755	785	750

- b) For the given data, compute 3 month moving average

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct
Orders	120	90	100	175	110	50	75	130	110	90

Compute the 3 month weighted moving average with a weight of 52% for the October data, a weight of 23% for the September data, and a weight of 18% for the August data. [8]

4. a) An electric housing has an annual usage rate of 75,000 units/year, an ordering cost Rs. 800 and annual carrying charge of 15.4% of the unit price. Delivery lead time is 2 weeks. Determine EOQ, Lead time consumption and the optimal operating doctrine. (Assuming the cost of one unit is Rs. 12). [8]
- b) Explain the various steps of Line of Balance technique. [8]
5. a) Explain about the Routing procedure. [8]
- b) What is the role of bills of materials? How demand affects the bill of material? [8]
6. a) Explain the various types of graphs used in scheduling and control related problems. [8]
- b) Explain about the concept of Chase planning. [8]
7. a) Explain how tool dispatching works in centralized control and decentralized control. [8]
- b) Explain the significance of follow up in production. [8]