Code No: **R1642031** **R16** **Set No. 1**

IV B.Tech II Semester Regular Examinations, September - 2020

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 FOUR questions from Part-B
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PART–A *(14 Marks)*

1 a) List out the types of production. [2]
b) Give an example each for long term and short term forecasting? [2]
c) Derive expression for basic EOQ. [3]
d) How would you contrast scheduling and loading. [3]
e) State the standard scheduling policies. [2]
f) How do you make use of computer in production planning and control? [2]

PART–B *(4x14 = 56 Marks)*

2 a) Explain about the elements of production planning and control. [7]
b) Explain the importance of PPC department in a typical production system. [7]

3 a) How would you describe general principles of forecasting? [6]
b) Demand (In thousands) for bearings of a company is given below. Forecast for the year 2009 was 75 Units.
(i) Estimate the sales forecast for 2016 with least square method.
(ii) Obtain the forecast of demand for the year 2016 by exponential smoothing method with α=0.5 and compare with earlier forecast.

Year	2009	2010	2011	2012	2013	2014	2015
Demand	77	88	94	85	91	98	90

[8]

4. a) Explain the use of Line of Balance (LOB) in Production control. Explain in detail the steps involved in LOB. [7]
b) What is meant by VED analysis? What is its significance? [7]

5. a) Distinguish between the routing functions of continuous and intermittent productions. [7]
b) Write short note on bill of material with an example. [7]

6. a) A house painting contractor has five houses to paint. Following are the estimated times required to paint each house and due date for completion.

House	Estimated Time(days)	Due Date
A	2.5	8
B	4.0	10
C	3.0	7
D	5.0	14
E	2.0	16

Use the Shortest Processing Time rule to sequence the five jobs Compute average flow time and average tardiness per job using this sequence [7]

b) Explain the process flow involved in Master Scheduling. [7]

7. a) What are the principle functions of Dispatching? What are the documents generally prepared while performing dispatching function? [7]

b) Explain the applications of computer in production planning and control. [7]

Code No: **R1642031** **R16** **Set No. 2**

IV B.Tech II Semester Regular Examinations, September - 2020

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 FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1. a) What are the needs for PPC? [2]
   b) What is the importance of forecasting? [2]
   c) Differentiate between MRP-II and ERP. [3]
   d) Write the importance of route sheet? [2]
   e) What is expediting? [2]
   f) What are the steps involved in dispatching? [3]

PART–B *(4x14 = 56 Marks)*

2. a) Explain the objectives and functions of PPC. [7]
   b) Discuss about organization of production planning and control department. Draw the internal organization of PPC. [7]

3. a) Distinguish between the qualitative and quantitative methods of sales forecasting. [7]
   b) Describe least square method of sales forecasting with its advantages and limitations. [7]

4. a) What are the functions of inventories? [5]
   b) Prepare ABC analysis for on the following sample of items:

Item	A	B	C	D	E	F	G	H	E	F
Consumption	300	2800	30	1100	40	220	150	800	600	80
Unit Price	10	15	10	5	5	100	50	5	15	10

[9]

5. a) Explain various steps involved in routing procedure. [7]
   b) Write short note on bill of material with an example. [7]

6. a) What is line balancing? What is its importance in PPC? Explain it with an example. [7]
   b) What is aggregate planning? Write its functions, merits and demerits. [7]

7. a) What are the stages of follow up? Explain any two. [7]
   b) When do you prefer decentralized dispatching to centralized dispatching? Explain their features [7]

Code No: **R1642031** **R16** **Set No. 3**

IV B.Tech II Semester Regular Examinations, September - 2020

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 FOUR questions from Part-B
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PART–A *(14 Marks)*

1. a) How would you compare production planning and production control. [3]
   b) List out the various forecasting techniques. [2]
   c) What is JIT? [2]
   d) Distinguish between the route card and route sheet. [3]
   e) What is chase planning? [2]
   f) Define dispatching. [2]

PART–B *(4x14 = 56 Marks)*

2. a) What are the different types of production? Why there is a need for PPC department? [7]
   b) Explain about the objectives of production planning and control. [7]

3. a) Define forecasting. Discuss its importance in industries. [7]
   b) List out the advantages and disadvantages of short term and long term forecasting. [7]

4. a) Describe various steps involved in material requirement planning. [8]
   b) What is economic order quantity? A company uses annually 12000 units of a particular type of a component costing Rs. 1.25 per unit. Placing each order costing Rs.15 and carrying costs are 16% per year per unit of average quantity. Find economic order quantity. [6]

5. a) What is routing in production. Discuss the different activities in routing procedure. [7]
   b) Draw a route sheet by taking an example. [7]

6. a) What are the factors influencing scheduling? [7]
   b) Discuss the differences between scheduling and loading. [7]

7. a) Explain the need of existence of follow up procedure. [7]
   b) Describe the following forms used in dispatching:
   (i) Move order
   (ii) Production ticket. [7]

Code No: **R1642031** **R16** **Set No. 4**

IV B.Tech II Semester Regular Examinations, September - 2020

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 FOUR questions from Part-B
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PART–A *(14 Marks)*

1. a) List the elements of production control? [2]
   b) What is the necessity of forecasting? [2]
   c) What are the reasons for storing the inventory? [3]
   d) What is bill of material. [2]
   e) Define aggregate planning. [2]
   f) Can you give one reason to initiate follow up function in production control? [3]

PART–B *(4x14 = 56 Marks)*

2. a) Draw and explain the internal organization of PPC. [7]
   b) Explain different types of production systems and differentiate between them. [7]

3. a) Enlist various methods of demand forecasting and explain any two of them in detail. [8]
   b) Forecast the production for next two years when the production quantity for last ten years is as follows: 200, 225, 235, 240, 255, 260, 265, 270, 268, 273
   Use the following methods and comment on results
   (i) Moving average (3 years and 5 years)
   (ii) Exponential smoothing for α=0.3 and 0.7. [6]

4. a) Explain the costs associated with inventory. [6]
   b) Explain P-system and Q-system of inventory management. [8]

5. a) Explain major factors that affect routing procedure in detail. [7]
   b) Define routing and its significance. Explain about the important components of routing sheets? [7]

6. a) Write short notes on the types of scheduling techniques? [7]
   b) Explain the procedure by which scheduling '2' jobs in 'n' machines can be done with suitable example. [7]

7. a) State and explain activities of dispatcher. [7]
   b) What is the purpose of follow up. Explain the types of follow up? [7]