

Code: ME7T2

**IV B.Tech - I Semester – Regular / Supplementary Examinations
November 2016**

**PRODUCTION PLANNING & CONTROL
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1.

- a) List and briefly discuss different phases of production planning and control. 7 M
- b) Elucidate in detail functions of PPC with neat sketch. 7 M

2.

- a) List out the factors to be considered in selecting the forecasting model. 7 M
- b) A firm uses simple exponential smoothing with $\alpha=0.02$ to forecast demand. The forecast for the first week of January was 400 units, whereas actual demand turned out to be 450 units.
 - i) Forecast the demand for the second week of January.
 - ii) Assume that the actual demand during the second week of January turned out to be 460 units. Forecast the demand up to February third week, assuming the subsequent Demands as 465, 434, 420, 498 and 462 units.

7 M

3.

a) Give a comparison between Q System and P System. 7 M

b) What is selective inventory control? Explain about ABC Analysis in detail. 7 M

4. Elucidate in detail the characteristics of JIT, and also explain the seven wastes according to JIT. 14 M

5.

a) Discuss in detail various factors affecting Routing Procedure. 7 M

b) Outline the importance of route sheets in Routing. 7 M

6.

a) A student at an university has five term papers due soon and he must decide in what order to complete them. Below are the estimated number of days required to complete each paper and due dates. 7 M

Course	Estimated Time (days)	Due date
TD	4	7
DOM	4	8
POM	6	12
OR	5	17
KOM	3	16

- i. Use the shortest processing time rule to sequence the jobs. Compute the average flow time and average tardiness per job using this sequence.
 - ii. Use Earliest Due date rule to sequence the jobs. Compute the average flow time and average tardiness per job using this sequence.
- b) Explain various steps involved in Johnsons Algorithm.

7 M

7. Western Air conditioners is an AC assembling company based at Bhopal. Table shows the demand forecast provided by its marketing department for AC's throughout the country in the coming six months, from January to June. The cost involved in changing the output rate compared to the previous month is Rs. 3000 for 1-20 units, Rs. 4000 for 21-50 units, and Rs. 6000 for 51-70 units, each worker assembles one AC per day. The overtime cost is Rs. 4 per day unit in excess of the maximum capacity of the factory i.e. 60 units. Find the level output rate plan. Find also the total cost in this plan. Assume carrying cost as Rs. 1 per unit for 6 months and back-ordering cost Rs. 1 per unit per month.

14 M

Month	Demand forecast (units)	No. of Working days
Jan	800	21
Feb	1400	23
Mar	900	25
Apr	1700	22
May	2200	24
Jun	700	20

8.

a) Give several applications of computer in production planning and control. 7 M

b) Discuss about Centralized and Decentralized Dispatching in detail. 7 M