

IV B.Tech I Semester Supplementary Examinations, February 2008
PRODUCTION PLANNING AND CONTROL
(Common to Mechanical Engineering, Mechatronics and Production Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define machine tool. Explain the selection of a machine tool.
 (b) Explain Planning the best sequence of operations. [8+8]
2. List the Production / operations management problems and key decisions in day to day operations. Explain briefly. [16]
3. (a) What are the assumptions made in regression analysis.
 (b) Fit the linear regression model for the following data and forecast the demand for the period 9. [8+8]

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

4. (a) Explain the procedure for ABC analysis of inventory control.
 (b) Explain the VED analysis of inventory control. [12+4]
5. (a) What factors do you consider in fixing the maximum and minimum stock levels ?
 (b) Why do we balance the conflicting objectives of minimizing cost and maximizing service levels in inventory models
 (c) What are some of the benefits and costs associated with safety stock? [8+4+4]
6. (a) Explain the terms forward scheduling and backward scheduling.
 (b) Explain with a neat sketch how Gantt chart is used to show schedules. Explain the symbols used in drawing Gantt chart. [6+10]
7. (a) Explain the use of Gantt charts.
 (b) Explain the schedule boards and commercial devices. [8+8]
8. (a) With the help of a Organizational Charts, explain the Centralized and Decentralized System of Dispatching.
 (b) List the merits and demerits of Centralized and decentralized system of dispatching. [10+6]

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1. (a) Explain various activities of Production Planning and Control.
(b) Explain the qualifications and duties of Production planner. [8+8]
2. Explain the differences between process and product focused organizations. [16]
3. Explain methods of forecasting for established products. [16]
4. The Mahavir Paints Ltd. Would like to improve its inventory management policies for its supply of paint used for automobiles. Annual demand for such paint is 50,000 litres, and the paint costs Rs.20. per litre. Annual carrying costs are estimated at 15% of the value of paint held. Each order costs Rs.80.
Determine
 - (a) How much paint should be ordered each time
 - (b) How often should paint be ordered?
 - (c) What is the total inventory cost? [6+6+4]
5. (a) What are the informational pre-requisites of an MRP system?
(b) What are the materials planning techniques available as to direct and indirect materials? [8+8]
6. What are the basic requirements of routing and explain with different steps considered. [16]
7. Explain:
 - (a) Line balancing
 - (b) Expediting. [16]
8. Explain the role of computers in production planning and control ? [16]

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1. (a) Explain the functions Production Planning.
(b) Explain the aims of Production Planning and Control. [8+8]
2. Explain the following product characteristics with respect to a Ball pen.
(a) Operational characteristic.
(b) Functional aspect.
(c) Durability and Dependability.
(d) Aesthetic aspect. [4×4]
3. (a) What are different methods of sales forecasting?
(b) Discuss the merits and limitations of sales forecasting method. [8+8]
4. (a) Explain the need for inventory management.
(b) A manufacturer has to supply 12,000 units of a product per year to his customer. The demand is fixed and known and the shortage cost is assumed infinite. The inventory holding cost is Re. 0.20 per unit per month and the setup cost per run is Rs. 350. Determine
 - i. The optimum run size
 - ii. Optimum scheduling period
 - iii. Minimum total yearly variable cost. [6+10]
5. (a) Define material requirement planning (MRP)
(b) What are the inputs to material requirement planning (MRP)
(c) What are the objectives of MRP. [4+6+6]
6. (a) Explain master scheduling with suitable example.
(b) Explain how graphs are useful for scheduling and control problems. [8+8]
7. (a) What is scheduling? What are the different scheduling methods?
(b) What is aggregate planning? Explain the pure strategies of aggregate planning? [8+8]
8. (a) Explain how do you present production delays.
(b) What are the course of production delays, give examples. [8+8]

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1. (a) Explain the common principles which commonly a process planner follows to arrive at the best feasible sequence of operations.
(b) Explain the importance of the best sequence of operations. [8+8]
2. Explain how "the types of industry" has a relation with the organization of Production Planning and Control. [16]
3. (a) What are different methods of sales forecasting?
(b) Discuss the merits and limitations of sales forecasting method. [8+8]
4. (a) How to estimate shortage cost of inventories? Explain.
(b) Explain various types of inventories. [8+8]
5. (a) Compare of Fixed order Quantity (Q - System) and Fixed Period Order (P-System) System and Explain their applicability.
(b) What do you mean by Fixed Periodic Review System and explain its characteristics of the System. [10+8]
6. (a) Define Scheduling.
(b) Explain different methods of scheduling. [4+12]
7. What is Aggregate Planning? How does it differ from Long range Planning and short period planning. Explain with an example. [16]
8. Explain the three system of process reporting. [16]
