

IV B.Tech I Semester Regular Examinations, November 2007
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) Explain the functions Production Planning.
 (b) Explain the aims of Production Planning and Control. [8+8]
2. What is "Process Planning sheet"? What is its significance? Explain it with an example. [16]
3. (a) Explain long term forecasting and short term forecasting.
 (b) Explain Delphi technique for forecasting. [8+8]
4. (a) Explain how ABC analysis is useful in a foundry unit?
 (b) Explain how VED analysis is applicable for spare parts management? [8+8]
5. (a) Explain, in detail the procedural steps involved in MRP.
 (b) State and explain the functions served by MRP. [8+8]
6. (a) Define Scheduling.
 (b) Explain different methods of scheduling. [4+12]
7. A manufacturer has four orders on hand which he has to schedule on four different machines. How would you schedule his orders? [16]

Order no	Order size	Standard pieces per hour on machines			
		A	B	C	D
1	100	1	3/2	4/5	4/3
2	200	2	1	10/11	5/3
3	50	2	4/3	1	5/2
4	75	1	4/5	2/3	5/4
Machine hours available		80	150	250	100

8. (a) Explain how a computer can be used to prepare a schedule chart.
 (b) Give the specimen of inspection card. [12+4]

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1. (a) Explain the “Control” stage.
(b) Explain how to select best method of manufacture. [8+8]
2. Explain clearly whether would you like to have staff type of organization or line type of organization for Production Planning and Control department. Give your reasons for you answer. [16]
3. What is time series analysis? How the forecast is made from the time series. [16]
4. (a) What are the advantages of ABC analysis?
(b) What are the limitations of ABC analysis?
(c) How VED analysis overcome the limitations of ABC analysis? [5+5+6]
5. (a) What are the characteristics of fixed order Quantity (Q) System. Illustrate with a figure.
(b) What are the limitations and advantages of Fixed Order Quantity (Q) System and mention the application. [8+8]
6. (a) Explain master scheduling with suitable example.
(b) Explain how graphs are useful for scheduling and control problems. [16]
7. (a) Explain the use of Gantt charts.
(b) Explain the schedule boards and commercial devices. [8+8]
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. List the Production / operations management problems and key decisions in day to day operations. Explain briefly. [16]
3. (a) Explain the importance of forecasting in an industry.
 (b) List and explain the qualitative methods of forecasting. [8+8]
4. (a) What are the reasons for carrying inventories ?
 (b) How are the inventory costs estimated and normally expressed? [8+8]
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? [4+12]
6. (a) Define routing ?
 (b) Discuss different routing procedure. [4+12]
7. (a) Distinguish between gantt progress chart and a gantt load chart?
 (b) A company has orders for five jobs ABCD and E that must be processed sequentially through two work centers baking and decoration. The time in hours required for the jobs is shown below. Determine the schedule of sequence that minimizes the total elapsed time for the five jobs and present it in the form of the gantt chart. [4+12]

Work centers	Time required jobs(Hrs)				
	A	B	C	D	E
Baking	5	4	8	7	6
Decoration	3	9	2	4	6

8. Explain the role of computers in production planning and control ? [16]

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1. (a) Explain various objectives of Production Planning and Control.
(b) Explain Production Control. [8+8]
2. Explain process - focused organizational structure. [16]
3. Discuss various approaches in forecasting demand for new products. [16]
4. (a) Explain the significance of EOQ formula. What are its Limitations?
(b) What is meant by VED analysis? What is its significance? [8+8]
5. (a) What is the difference between Q-system and P-system.
(b) M/s. KOBO Bearing Ltd is committed to supply 24000 bearings per annum to M/s. Deluxe Fans on a steady daily basis. It is estimated that it costs 10 paise as inventory holding cost per bearing per month and the set up cost per run of bearing manufacture of Rs. = 324.
 - i. What should be the optimum run size for bearing manufacture ?
 - ii. What should be the interval between two consecutive optimum runs
 - iii. Find out the minimum inventory holding cost ? [4+12]
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. What is Aggregate Planning? How does it differ from Long range Planning and short period planning. Explain with an example. [16]
8. (a) Explain briefly the dispatching activities.
(b) Explain the necessity of close control in dispatching activities ? [8+8]
