

APJ Abdul Kalam Technological University

First Semester M.Tech Degree Examination December 2015

Ernakulam II Cluster

MECHANICAL ENGINEERING

(PRODUCTION & INDUSTRIAL ENGINEERING)

Time 3hrs 05ME 6403- MANUFACTURING SYSTEMS MANAGEMENT Max Marks 60

1. Describe four different types of production processes. What are the advantages and disadvantages of each? When should each be used? (12 marks)
2. a) What is plant layout? What is the need for plant layout? (4marks)
b) What are the objectives of plant layout? What are the types of plant layout? (8 marks)
3. a) Explain manufacturing resource planning (MRP II) (5 marks)
b) Explain Materials requirement planning (MRP I) (5 marks)
c) What is Aggregate planning and what are the aggregate planning strategies involved?
(8marks)

Or

4. a) Explain Enterprise Resource Planning (5 marks)
b) What are the objectives of Material requirement planning (5 marks)
c) Alpha industry needs 15000 units/year of a bought out component which will be used in its main product. The ordering cost is Rs 125 per order and carrying cost per unit year is 20% of purchase price per unit which is Rs 75.

- Find
- a) Economic order quantity.
 - b) Number of orders per year.
 - c) Time between successive orders. (8 marks)

5. a) What are the different types of Kanban systems? Explain the working of dual Kanban system with a neat sketch (10 marks)

b) What is inventory control? What are the steps in making an ABC analysis? (8marks)

Or

6. a) A company manufactures a line of 10 items. Their usage and unit cost are shown in the following table along with the annual dollar usage. The latter is obtained by multiplying the unit usage by the unit cost.

a. Calculate the annual dollar usage for each item.

b. List the items according to their annual dollar usage.

c. Calculate the cumulative annual dollar usage and the cumulative percent of items.

d. Group items in to an A,B,C classification
(10 marks)

Part Number	Unit Usage	Unit Cost \$
1	1100	2
2	600	40
3	100	4
4	1300	1
5	100	60
6	10	25
7	100	2
8	1500	2
9	200	2
10	500	1

b) What are the types of model of inventory system ? Explain them in detail. (8 marks)