KUMARAGURU
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Register Number: …….

M.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2013)

Third Semester

INDUSTRIAL ENGINEERING

P131ETE37: Inventory and Materials Management

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. List the objectives of Inventory management.
2. State any four reason to hold inventory in an organization.
3. What is the significance of Quantity discount model?
4. What are the characteristics of fixed order quantity system?
5. What are the functions served by MRP?
6. List the input parameters for MRP system.
7. List any two advantages and limitations of Inventory control methods.
8. How will you determine the safety stock?
9. List any four important basic elements of JIT.
10. List the objectives of materials management.

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

Q.No:11 is Compulsory

11. A small scale unit manufactures a product and it is expected to supply 80 units in week 1,120 in week 4,120 in week 6,and 100 in week 8.Each product is made of 2 housings, shaft assembly and one wheel. For shaft assembly order quantities, lead times and inventories on hand at the beginning of period 1 are given below

Part	Order quantity	Lead time	Inventory on hand
Housings	600	2 weeks	200
Shaft assembly	400	3weeks	440
Wheel	800	1week	100

Apart from the above requirement, anther 180 shaft assembly required for anther customer. 600 units of housings are already scheduled to be arrived at the beginning of week 2. Complete the material requirement plan for housing, shaft and sheets and what quantities of orders must be released and when they must be released in order to satisfy the MRP

12. A contractor undertakes to supply diesel engine to a truck manufacturer at the rate of 25/day. He finds that the cost of holding a completed engine in stock is Rs 16 per month .Production of engines is in batches and each time a new batch is started, there are set up costs of Rs 10000/.How frequently should the batches be started and what will be the minimum average inventory cost and production time if production rate is 40 engines /day. Assume 300 working days in a year.

13. The following information on production inventory system of a manufacturing company is given below

Determine 1. Optimal size 2.Manufacturing time 3.Time between set ups

Demand per annum	6000units
Unit cost	Rs 40
Set up cost	Rs 500
Production rate	3600 units
Holding cost	Rs 8/unit/annum
Shortage cost /unit	Rs 20/unit/annum

14. A manufacturing company requires special gears at the rate of 300 numbers per year. Each gear costs Rs 36.The procurement cost and inventory carrying costs are estimated at Rs 30 and 20% respectively. If the supplier offers a discount of

Rs 2 per gear on an order of 200 or above, will it be advisable to avail the discount? What should be the order quantity

15. Draw the product structure tree for a three drawer file cabinet and prepare bill of material

16. (i) List any five characteristics of A class, B class, C class inventory items (6)

(ii) Ten items are kept in the Inventory. The details regarding the number of items used per annum and price per unit are given below (10)

Item no	Annual usage	Price
101	200	40
102	100	360
103	2000	0.2
104	400	20
105	6000	0.04
106	1200	0.8
107	120	100
108	2000	0.7
109	1000	1.0
110	80	400

Classify the items into A,B,C and draw the graph

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