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ET-581(B)

B.Tech. Civil (Construction Management)

Term-End Examination

June, 2010

02632

ET-581(B) : INVENTORY AND STORES MANAGEMENT

Time : 3 hours *Maximum Marks : 70*

Note : *Answer **any five** of the following questions. Use of calculator is **permitted**.*

1. (a) What are the relevant costs that management should try to balance in deciding on the size of purchase orders ? How do they vary with order ? 7+7

   (b) The demand for a product is 500 units per month. Every production run requires a set-up cost of Rs. 1000. It cost Re. 1.00 to store unit product for one month. What should be the optimal number of units to produce in each production run ?

2. (a) Explain why ABC analysis is an important concept for managing inventories. 7+7

   (b) A company needs 6000 units of a product per month. The product is purchased from outside for which the set-up cost is Rs. 2000 per order. The cost of holding inventory, in terms of capital tied up amounts to Rs. 1.50 per unit per month. How frequently should the company place orders for the product ?

3. (a) What is a reorder point ? Dr. w a rough sketch of a simple inventory model showing the reorder point, order quantity, and procurement time. 7+7

(b) A large bakery buys flour in 25 - kg bags. The bakery uses an average of 4860 bags a year. Preparing an order and receiving a shipment of flow involves a cost of Rs. 40 per order. Annual carrying cost are Rs. 300 per bag.

(i) Determine the economic order quantity

(ii) What is the average number of bags on hand ?

(iii) How many orders per year will these be ?

(iv) Compute the total cost of ordering and carrying flour.

4. (a) Briefly explain the role of Bin card in the store. Also explain the suspense account. 7+7

(b) A toy manufacturer uses 48,000 rubber wheels per year for its popular dump truck series. The firm makes its own wheel which it can produce at a rate of 800 per day. The toy trucks are assembled uniformly over the entire year. Carrying cost is Rs. 10 per wheel a year. Set up cost for a production run of wheels is Rs. 450. The firm operates 240 days per year. Determine each of the following :

(i) Optimal run size

(ii) Minimum total annual cost for carrying and set-up.

(iii) Cycle time for the optimal run size

(iv) Run time.

5. (a) Suppose the lead time for procurement of a product gets doubled. Will you recommend doubling its buffer stock ? Justify your answer. 7+7

(b) The Shivkumar Corporation at Orai, is both a producer and a user of brass couplings. The firm operates 220 days a year and uses the couplings at a steady rate of 50 per day. Couplings can be produced at a rate of 200 per day. Annual storage cost is Rs. 10 per coupling and machine set up cost is Rs. 350 per run.

(i) Determine the economic run size.

(ii) Approximately how many runs per year will these be ?

(iii) Compute the maximum inventory level.

(iv) Determine the length of the pure consumption portion of the cycle.

6. (a) Illustrate the factors that influence the layout of the store. **7+7**

(b) Given the product structure tree shown, compute the net requirements of A,B, C, D, E and F to produce 10 units of end item X. No stock is on hand.