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**ET-581(B)**

01099

# B.Tech. Civil (Construction Management)

## Term-End Examination

## December, 2010

## ET-581(B) : INVENTORY AND STORES MANAGEMENT

*Time : 3 hours* *Maximum Marks : 70*

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

1. (a) Enumerate the safety precautions to be taken for the storage of explosions and storage of chemicals. 7+7

   (b) The demand for a product is 5000 units per month. Every production run requires a set-up cost of Rs.3000. The production cost amounts to Rs.30 per unit. Find the optimal lot size if the annual rate of interest is 18 percent.

2. (a) What is buffer stock? List the reasons for keeping a buffer stock. 7+7

(b) A company has a monthly demand of 800 units of a product. The company can produce 8 products per hour when it starts a production run. It costs Rs.3000 for shop set-up to start a production run. The inventory carring cost amounts to Rs.1.50 per unit per month. What is the optimal batch size? Assume 25 working days in a month and eight working hours in a day. How frequently should the production run be undertaken and what should be the length of each run?

3. (a) What kind of policy or procedure would you recommend to improve the inventory operation in a department store? Justify your answer with suitable examples. 7+7

(b) A local distributor for a national tyre company expects to sell approximately 9600 steel-belted radial tyres of a certain size and tread design next year. Annual carrying cost are Rs.16 per tyre and ordering costs are Rs 75. The distributer operates 288 days a year.

(i) What is the EOQ?

(ii) How many times per year does the store reorder?

(iii) What is the length of an order cycle?

4. (a) Explain the advantages and disadvantages of central store. Justify your answer with suitable examples. 7+7

(b) A small manufacturing firms uses roughly 3400 kg of chemical dye a year. Currently the firm purchases 300 kg per order and pays Rs.30 per kg. The supplier has just announced that order of 1000 kg or more will be filled at a price of Rs.20 per kg. The manufacturing firm in curs a cost of Rs.1000 each time it submits an order and assigns an annual holding cost of 17 percent of the purchase price per kg.

(i) Determine the order size that will minimize the total cost.

(ii) If the supplier offered the discount at 1500 kg instead of 1000 kg. What order size would minimize total cost?

5. (a) What do you understand by requisition? How will you resolve the problem of pending requisition? Also explain Just in time (JIT). 7+7

(b) The demand for an item is 20,000 units per year. The item can be produced at the rate of 4000 per month. The set up cost is Rs.3000 per cycle and the inventory carrying cost is Re 0.40 per unit per month. The shortage cost is Rs 25 per unit per month. What is the optimal production in each set-up?

6. (a) Distinguish between dependent and independent demand in a Mc Donald's, in a integrated manufacturer of personal copies, and in a pharmaceutical supply house. 7+7

(b) End item X is assembled from three major assemblies: A, B, and C. Sub assembly A consists of two units of D, two units of E, and one F. To make B, component G and three units of H are needed. Sub assembly C requires two units of J and one F. Component D requires two units of J and one unit of K.

(i) Construct a product structure tree for X.

(ii) What quantities of A, B, C, D, E, F, G, H, J and K are required to produce 100 units of X ?

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