

**B.Tech. Civil (Construction Management)**

**Term-End Examination**

00830

**June, 2016**

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

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any *ten* questions. All questions carry equal marks. Use of scientific calculator is allowed.

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1. (a) Explain the need to maintain an inventory in construction industry, giving examples. 2
- (b) Detail and discuss the parameters influencing the maintenance of inventory, say, with reference to the construction of a bridge. 5
  
2. A multistoried building (residential-cum-office space) project (involving R.C.C., bricks, and steel and timber, etc.) is to be launched at about 100 km from the nearest city. Discuss in detail (item wise) the procurement, storage, and use of materials. 7

3. (a) What is a purchase order ? Give its main components. 3
- (b) Give a specimen of a typical purchase order. 4
4. (a) You are the engineer incharge for the construction of a flexible-pavement road, that includes a few culverts (R.C.C., with brick abutments). What are the items of material that are supplied by P.W.D. ? Prepare the requisition for these materials. 5
- (b) What data is required for framing the exact quantities of the items ? 2
5. A piece of a civil engineering construction work is based on the following data :
- (a) No. of uses/year = 15,500
- (b) Average rate of each item = ₹ 18,000
- (c) Cost of placing one order = ₹ 200  
(for purchase)
- (d) Carriage cost = 13.25 % of the average inventory value

Determine :

- (i) Optimal size of the order
- (ii) No. of orders to be placed per year
- (iii) Time period per order; and
- (iv) Total cost involved. 7

6. An entrepreneur, with a capital of ₹ 1 lac, is to start a business. He decides to purchase (for later sale) these items :

- (a) Pencils @ ₹ 5 per pencil; while the demand rate = 15,000.
- (b) Watches (demand rate = 800) @ ₹ 2,000 per piece.
- (c) Umbrellas (demand rate = 1,500) @ ₹ 300 per piece.

Determine the optimal lot size for each item, and total optimal cost of inventory management if :

- (i) Ordering cost per order for item (a) = ₹ 40.
- (ii) Ordering cost per order for item (b) = ₹ 110.
- (iii) Ordering cost per order for item (c) = ₹ 140.

7

7. A business firm pursues the policy of procuring 6 items every year, such as :

- (a) Pants (Annual demand = 50,000/-)
- (b) Belts (Annual demand = 30,000/-)
- (c) Toys (Annual demand = 1,00,000/-)
- (d) Ties (Annual demand = 20,000/-)
- (e) Tie pins (Annual demand = 10,000/-)
- (f) Kerchiefs (Annual demand = 2,000/-)

If the number of orders is 5 per year, assuming the average inventory level at 30% of the order size, find the reduced inventory levels (keeping the number of orders as 5 per year).

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8. Write short notes on any *two* of the following :

$$2 \times 3 \frac{1}{2} = 7$$

- (a) Factors influencing the size of store space for materials at site.
- (b) Merits and demerits of having a central store.
- (c) Storage of explosives
- (d) Storing materials that damage each other

9. A colony (residential and official complexes) is to be laid near a proposed dam site. Also, roads, drains and culverts are included in the project. Moreover, water supply system is proposed as well. The relevant materials are to be purchased regularly, stored and issued for use.

Draw out, by hand, an appropriate layout of the material storage facilities. Bring out the principles that have guided you.

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10. Using sketches, explain the important precautions to be taken while storing cement, timber, lime and mild steel.

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11. Give a detailed plan (with sketches) of precautions to be taken while storing timber, plastic sheets, PVC, fabricated door and window sets, and other items that can rot under wet conditions.

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12. Discuss the necessity and practice of Sampling Inspection. Compare it with the comprehensive inspection procedure. Give examples.

7