

# MANAGEMENT ACCOUNTING

## EOQ

### QUESTION 1

- (a) Bora Supermarket carries on its operation in Nakuru Town. On annual basis, it orders 480,000 pens from a Nairobi based distributor. A packet of twenty four pens delivered to Bora's warehouse costs Sh.480 including transport charges. The supermarket borrows money from BCD Bank at an interest rate of 10% per annum to finance its inventories.

The supermarket also incurs Sh.1,500 to place an order for the pens and Sh.8 carrying costs for each pen

#### Required:

- (i). Economic order quantity (EOQ) for the pens.
- (ii). Total costs at the economic order quantity.
- (iii). For orders of 72,000 pens and above, the distributor has offered a discount rate of 10% on the delivery price

Advise the management of the supermarket on whether to take advantage of the discount offer

### QUESTION 2

Smart Options Limited has been selling a product branded Exe for the last five years  
The demand for product Exe for the past one year is as follows:

Month	Demand in units
January	160,000
February	180,000
March	200,000
April	240,000
May	260,000
June	280,000
July	280,000
August	240,000
September	200,000
October	160,000
November	120,000
December	80,000

#### Additional information:

1. Minimum re-order period is 3 months
2. Average re-order period is 4 months
3. Maximum re-order period is 5 months
4. Purchase cost per unit is sh. 60
5. Holding cost percentage is 20%
6. The company has been ordering 5,000 units per order
7. Ordering cost is sh. 40 per order

#### Required:

- a) Calculate the following

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- i. Re-order level
- ii. Minimum stock level
- iii. Maximum stock level
- iv. Average stock
- v. Economic order quantity (EOQ) of product Exe
- vi. Total cost the economic order quantity

### QUESTION 3

(b) Stockmart Limited manufactures a product branded "Bora". The main raw material used in the manufacture of "Bora" is material "MT2011".

The current stock control policy of the company is to order material "MT20 II" twice a year. The quantity of each order is equivalent to one-half of the year's forecast demand.

The following information relates to material "MT2011":

Annual demand	12,000 units.
Ordering cost	Sh.60 per order.
Annual holding cost	12% of the purchase price.
Purchase price per unit	Sh.75.
Lead time	1month.

The procurement manager proposes to change the current stock control policy to the Economic Order Quantity (EOQ) policy. He estimates that a buffer stock of an additional 300 units should be provided to cover fluctuations in demand.

#### Required:

If the new policy is adopted, calculate for material MT20 11:

- (i) Reorder level that should be set.
- (ii) Economic Order Quantity.
- (iii) Anticipated reduction in the value of the average stock investment.
- (iv) Anticipated reduction in total inventory costs during the first and subsequent years.

### QUESTION 4

Amdany Ltd. uses a part branded "Maxi" whose demand tends to be constant at an annual rate of 4.4 million units. The cost per unit for this part is Sh.220 and the cost of placing an order is Sh.550. Amdany Ltd. estimates that the annual inventory carrying cost of the part expressed as a percentage of cost of average inventory is 20%.

#### Required:

- i) Compute the economic order quantity (EOQ).
- ii) Compute the annual number of orders.
- iii) Calculate the reorder point. Assume that lead time is 11 days and the company works for 330 days in a year.

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### E.B.Q

#### QUESTION 1

- (a) Mtwapa Ltd sells Rollum at the rate of 500 per day throughout a working year of 250 days. The product is normally purchased by Mtwapa Ltd ready for sale at Sh. 70 per unit. Investigations have shown that Rollum can be made at the rate of 800 units per day in a part of the factory presently unoccupied. The direct costs per unit are as follows:

	<b>Sh.</b>
Direct materials	12.50
Labour cost	5.00
Variable overheads	22.50

The set-up cost per batch is estimated to be Sh. 6000, and stock holding cost percentage is 25% per annum.

#### **Required:**

- i) Calculate the Economic Batch Quantity (EBQ) for the company
- ii) The total cost associated with the EBQ computed in (i) above
- iii) State two major assumptions of EBQ