

PROBLEMS & SOLUTION

(A) Stock level

PROBLEM 01

Normal weekly requirement	1400 kg
Maximum weekly requirement	2000 kg
Maximum weekly requirement	1000 kg
Time to get fresh supplies	1 to 3 weeks
Ordering quantity	3,000 kg

From the above data, determine:

- a) Re-order level.
- b) Maximum level.
- c) Minimum level.

Solution:

a) Re-order level = Maximum consumption \times Maximum time
 $= 2000 \times 3 = 6000$ kg.

b) Maximum level = (Re-order level + Re-order quantity) - (Minimum consumption \times Minimum time)
 $= (6000 + 3000) - (1000 \times 1) = 8000$ kg.

c) Minimum level = Re-order level - (Normal consumption \times Average time)
 $= 6000 - (1400 \times 2) = 3200$ kg.

(Average time = $\frac{1+3}{2} = 2$ weeks.)

[D. U. '81]

PROBLEM 02

Two components, A and B are used as follows :

Normal usage	200 per week each.
Minimum usage	100 per week each.
Maximum usage	300 per week each.
Re-order quantity	A : 1,200 Units B : 2,000 Units
Reorder period	A : 4 - 6 weeks. B : 2 - 4 weeks.

Calculate for each component:

- i) Re-order level
- ii) Minimum level.
- iii) Maximum level.
- iv) Average stock level.

Solution:

i) Re-order level = Maximum usage \times Maximum time.

A = $300 \times 6 = 1800$ units

B = $300 \times 4 = 1200$ units

= Re-order level - (Normal usage \times Normal time)

A = $1,800 - (200 \times 5) = 800$ units.

B = $1,200 - (200 \times 3) = 600$ units.

= (Re-order level + Re-order quantity) - (Minimum usage \times Minimum time)

A = $(1,800 + 1200) - (100 \times 4) = 2600$ Units

B = $(1,200 + 2000) - (100 \times 2) = 3000$ Units.