

Paul Robbins training and consultancy

Management Accounting – Costing

Cost Classification and Ordering & Issuing Inventory

Ordering Inventory – Exercise

Model Answers

For each of the following scenarios please calculate the:

- *Minimum Inventory Level*
- *Maximum Inventory Level*
- *Re-order Level*
- *Re-order Quantity*

1. *Company A's minimum inventory days are 8 days and its maximum inventory days are 20 days. It uses on average 50 litres of material per day and the average lead time is 5 days.*

Minimum Inventory Level: 8 days x 50 litres = 400 litres

Maximum Inventory Level: 20 days x 50 litres = 1,000 litres

Re-order Level: 400 litres + 250 litres (5 days x 50 litres) = 650 litres

Re-order Quantity: 1,000 litres – 400 litres = 600 litres

2. *Company B uses 155 kg of material per day on average and it takes 5 days on average from placing an order to the materials being delivered. Its minimum and maximum inventory days are 7 and 15 days respectively.*

Minimum Inventory Level: 7 days x 155 kg = 1,085 kg

Maximum Inventory Level: 15 days x 155 kg = 2,325 kg

Re-order Level: 1,085 kg + 775 kg (5 days x 155 kg) = 1,860 kg

Re-order Quantity: 2,325 kg – 1,085 kg = 1,240 kg

3. *Company C has an average lead time of 4 days and it uses, on average 80 tonnes of material per day. Its minimum days' worth of inventory held is 6 days and its maximum days' worth of inventory held is 14 days.*

Minimum Inventory Level: $6 \text{ days} \times 80 \text{ tonnes} = 480 \text{ tonnes}$

Maximum Inventory Level: $14 \text{ days} \times 80 \text{ tonnes} = 1,120 \text{ tonnes}$

Re-order Level: $480 \text{ tonnes} + 320 \text{ tonnes} (4 \text{ days} \times 80 \text{ tonnes}) = 800 \text{ tonnes}$

Re-order Quantity: $1,120 \text{ tonnes} - 480 \text{ tonnes} = 640 \text{ tonnes}$

4. **Company D's minimum inventory days are 9 days and its maximum inventory days are 22 days. It uses on average 100 litres of material per day and the average lead time is 6 days.**

Minimum Inventory Level: $9 \text{ days} \times 100 \text{ litres} = 900 \text{ litres}$

Maximum Inventory Level: $22 \text{ days} \times 100 \text{ litres} = 2,200 \text{ litres}$

Re-order Level: $900 \text{ litres} + 600 \text{ litres} (6 \text{ days} \times 100 \text{ litres}) = 1,500 \text{ litres}$

Re-order Quantity: $2,200 \text{ litres} - 900 \text{ litres} = 1,300 \text{ litres}$

5. **Company E uses 60 kg of material per day on average and it takes 7 days on average from placing an order to the materials being delivered. Its minimum and maximum inventory days are 19 days and 35 days respectively.**

Minimum Inventory Level: $19 \text{ days} \times 60 \text{ kg} = 1,140 \text{ kg}$

Maximum Inventory Level: $35 \text{ days} \times 60 \text{ kg} = 2,100 \text{ kg}$

Re-order Level: $1,140 \text{ kg} + 420 \text{ kg} (7 \text{ days} \times 60 \text{ kg}) = 1,560 \text{ kg}$

Re-order Quantity: $2,100 \text{ kg} - 1,140 \text{ kg} = 960 \text{ kg}$

6. **Company F has an average lead time of 11 days and it uses, on average 22 tonnes of material per day. Its minimum days' worth of inventory held is 9 days and its maximum days' worth of inventory held is 24 days.**

Minimum Inventory Level: $9 \text{ days} \times 22 \text{ tonnes} = 198 \text{ tonnes}$

Maximum Inventory Level: $24 \text{ days} \times 22 \text{ tonnes} = 528 \text{ tonnes}$

Re-order Level: $198 \text{ tonnes} + 242 \text{ tonnes} (11 \text{ days} \times 22 \text{ tonnes}) = 440 \text{ tonnes}$

Re-order Quantity: $528 \text{ tonnes} - 198 \text{ tonnes} = 330 \text{ tonnes}$

7. **Company G uses an average of 26 units of material per day. Its average lead time is 10 days and its maximum and minimum days' worth of inventory held are 33 days and 13 days respectively.**

Minimum Inventory Level: 13 days x 26 units = 338 units

Maximum Inventory Level: 33 days x 26 units = 858 units

Re-order Level: 338 units + 260 units (10 days x 26 units) = 598 units

Re-order Quantity: 858 units – 338 units = 520 units

- 8. Company H uses 45 kg of material per day on average and it takes 9 days on average from placing an order to the materials being delivered. Its minimum and maximum inventory days are 15 days and 40 days respectively.**

Minimum Inventory Level: 15 days x 45 kg = 675 kg

Maximum Inventory Level: 40 days x 45 kg = 1,800 kg

Re-order Level: 675 kg + 405 kg (9 days x 45 kg) = 1,080 kg

Re-order Quantity: 1,800 kg – 675 kg = 1,125 kg