1. Answer the questions as following?
1.1 What is Ms-Excel?
1.2 In your opinion, should business use Ms-Excel for Supply Chain?
2. What function have these icons? Give a short definition.

| Icon | Definition / function |
| :--- | :--- |
| .00 |  |
| $\rightarrow .0$ |  |
| $\sum$ |  |
| $\square$ |  |
| $\square$ |  |
| $\leftrightarrows$ |  |

3. Providing the formula at the cells below:

|  | A | B | c | D | E | F | G |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Item ID | Item Name | Quantity | Cost | Amount | Discount | Price |
| 2 | 1001 | A | 10 | 1200 | 12000 | 5\% | 11400 |
| 3 | 1002 | B | 15 | 800 | 12000 | 2\% |  |
| 4 | 1003 | C | 24 | 400 | 9600 | 7\% |  |
| 5 | 1004 | D | 22 | 1000 | 22000 | 3\% |  |
| 6 | 1005 | E | 8 | 950 | 7600 | 1\% |  |
| 7 |  |  |  |  |  | Total |  |
| 8 | Finding: |  |  |  |  |  |  |
| 9 |  | Total Price |  |  |  |  |  |
| 10 |  | Maximum Qua |  |  |  |  |  |
| 1 |  | Minimum Quan |  |  |  |  |  |
| 2 |  | Average price |  |  |  |  |  |
| 3 |  | Count the num | er of items |  |  |  |  |

3.1 E9 $\qquad$
3.2 E10 $\qquad$
3.3 E11 $\qquad$
3.4 E12 $\qquad$
3.5 E13 $\qquad$
4. Providing the information for the inventory.

|  | A | B | C |  |  |
| :---: | :---: | :---: | ---: | ---: | :---: |
|  | Date | Document ID | Stock In | Stock Out | Inventory <br> Value |
| 1 |  |  |  |  |  |
| 2 | 05-Jan-18 | D001 | 1000 |  | 1000 |
| 3 | 06-Jan-18 | D002 | 5000 |  |  |
| 4 | 07-Jan-18 | D003 |  | 1200 |  |
| 5 | 08-Jan-18 | D004 |  | 800 |  |
| 6 | 09-Jan-18 | D005 |  | 2200 |  |
| 7 | 10-Jan-18 | D006 | 4500 |  |  |
| 8 | 11-Jan-18 | D007 |  | 3700 |  |
| 9 | Total |  |  |  |  |
| 10 | Carry forward |  |  |  |  |

What is the formula at the cell as follows?
4.1 E 2 $\qquad$
4.2 E3 $\qquad$
4.3 E4 $\qquad$
4.4 C9 $\qquad$
4.5 What is the amount of inventory at E10?
cost
5. Providing the information in the table of material cost.


What is the formula at the cell as follows?
5.1 E 10 $\qquad$
5.2 E11 $\qquad$
5.3 E12 $\qquad$
5.4 What is the material cost at E17? $\qquad$
5.5 What is the total cost at E18? $\qquad$
6. Manufacturers rely on the information that is included in the Bill of Materials (BOM) to build a product. BOM example


Could you provide the BOM, the details are as follows:
6.1 Giving a name of product
6.2 Providing the hierarchical structure of assemblies and their related parts and components.

You should provide the hierarchical structure at least 3 levels (0-2).
6.3 Writing the example table and data in the BOM

Note: You could design your own BOM and data in the table.
7. Reorder point (ROP) control is widely used and forms the basis for understanding other methods. In the following notes, a period is a consistent unit of time used for planning. Depending on the supply chain, it may be an hour, day, week or month. The important point is to maintain consistency throughout the calculations.

For each Stock Keeping Unit (SKU), ROP requires us to define:
Forecast demand per period (D) - how much we expect to use/sell
Supplier lead time (LTs) - time expressed in periods between submitting an order and receiving delivery

Planned order size (Q) - normal quantity of product we plan to order each time Safety stock (SS) - target stock on hand just before we receive an order

Review time (R) - time interval expressed in periods between reviews of stock levels to determine whether to place an order

Process lead time (LTp) - time expressed in periods from receipt of goods to their being available to the customer

We then derive:
Effective lead time (ELT) $=$ LTs $+\mathrm{LTp}+1 / 2 \mathrm{R}$
Lead time demand (LTD) = ELT x D
Reorder point (ROP) $=$ SS + LTD
Order-up-to level $=R O P+Q$
Each time we review the stock, we count: Stock on hand - real stock on the shelf
Stock on order - the total outstanding orders from the supplier
Back-orders - any stock ordered by a customer

We derive:
Effective stock = stock on hand + stock on order - backorders We place an order if:
Effective stock <= ROP
The amount we order is:
ROP + Q - Effective stock

## Fill the formula and the number/formula as follows:

| A | B | D |  |  |
| :--- | :--- | ---: | :--- | :---: |
| 1 | Forecast demand (D) | 5 | units per week |  |
| 2 | Supplier lead time (LTs) | 4 | weeks |  |
| 3 | Review time - R | 1 | weeks |  |
| 4 | Process lead time (LTp) | 0 | weeks |  |
| 5 | Planned order size (Q) | 5 | units |  |
| 6 | Safety stock (SS) | 10 | units |  |
| 7 |  |  |  |  |
| 8 | Effective lead time (ELT) |  | weeks |  |
| 9 | Lead time demand (LTD) |  | units |  |
| 10 | Reorder point (ROP) |  | units |  |
| 11 | Order up to |  | units |  |
| 12 |  |  |  |  |
| 13 | Stock on hand | 8 | units |  |
| 14 | Stock on order | 16 | units |  |
| 15 | Back-orders | 0 | units |  |
| 16 |  |  |  |  |
| 17 | Effective stock |  | units |  |
| 18 |  |  |  |  |
| 19 | Place an order? |  |  |  |
| 20 | Order size |  | units |  |

Formula at:
7.1 C8 $\qquad$
7.2 C9 $\qquad$
7.3 C10 $\qquad$
7.4 C19 $\qquad$
Amount at:
7.5 C11 $\qquad$
7.6 C17 $\qquad$
7.7 C20 $\qquad$

