L4M7 Summarised Note

1. **Understand methods for the storage and movement of inventory**

1.1. Identify the principles, purpose and impact of stores and warehouse design

a. Principles of stores and warehouses

- What is store?
- What is warehouse?
- What is stockyard?

b. Purposes of stores and warehouses

- Purposes
- Roles of warehouse managers and staff

c. Volumes of stock and locations

- How much stock is required?
- Types of warehouse and distribution centres
  - – Centralised warehouse
  - – Regional warehouse
  - – Local warehouse/store
  - – Warehousing in another country
  - – Outsourced warehousing
  - – Partnering

d. Factors influencing locations of storage

- Factors:
  - – Cost of location
  - – Availability and suitability of the building
  - – Availability and suitability of staff
  - – Nature of the items to be stored
  - – Access to transport infrastructure
- Deciding on storage facilities and locations
  - – Analyse current requirements, facilities and performance then add future needs based on projections and any change or development of the organisation
  - – Qualitative analysis
  - – Quantitative analysis
    - (a) Cost analysis
    - (b) Inventory performance measures
- How many storage facilities should an organisation have?
  - – Cost of warehouses
  - – Transport costs
- Generating options for storage location

e. Stores and warehouse design
    - Structural features
        - Single floor design/layout
        - Multiple floors design/layout
        - Light, temperature, humidity, and ventilation
        - Warehouse equipment requirements
        - Getting goods in and out
    - Stockyard design
    - Health and safety
    - Security

f. Factors that influence stores and warehouse layout
    - High-, medium- and low-usage items
    - Size, shape, weight, and volume of stock items
        - Pallet
        - Tote boxes
        - Cardboard boxes
        - Drums
        - Racking
        - Stock cages
        - Special handling
    - Equipment required for stock handling
    - Space
        - Demand prediction
        - Additional space
        - Space for temporary storage
    - Space for other operations
        - Quarantine area
        - Staff area
        - Parking stock handling equipment
        - Kitting
        - Reverse logistics
    - Future

g. Flow, space utilisation and flexibility
    - Flow
        - Good flow
        - Bottleneck
        - One-way system or direction
        - Through flow layout
        - U shape layout

– Fan shape layout
– Herringbone-shaped layout
- Space utilisation
- Space flexibility

h. Common questions
- Purposes of stores and warehouses
- Purposes of different types of warehouses
- Methods to decide on storage facilities and locations
- Compare between different structural layouts (true/false statement)
- Roles of different structural sections (vehicle 'dock', stockyard, security equipment, etc.)
- True/false statements on structural features, flow, and design of warehouse
- Total cost of storage
- Factors influencing the design of a new warehouse
- Factors influencing the selection of warehouse location

1.2. Explain the use of product coding in inventory operations

a. Systems for product coding
- Why use product coding?
- Own product code system
- Manufacturer's product code system
- Customer product code system
- Industry standard code system
- Multiple codes
- Types of code
  – Numerical
  – Alphabetical
  – Random generated or created
  – Sequential
  – Structured
- Check digits and validation
  – Purpose: to verify the integrity of the code when it is input manually sometimes
  – How to calculate check digit
- Industry standard codes and code groups
- Use of product codes in practice
- Linkage to product documentation
- Product codes and internal process: more efficient warehouse operations

b. Bar coding
- Standards of bar codes
- Types of bar code
- Use of bar code in supply chain management
- Bar codes and fixed assets

c. Other tracking technologies
d. The use of RFID (Radio Frequency Identification)

1.3. Contrast the impact of the use of different warehousing equipment
a. Materials handling equipment
- Typical equipment
  – Dollies
  – Sack trucks
  – Trolleys
  – Turntable trucks
  – Roll cages
  – Order pickers
  – Pallet trucks
  – Pallet stackers
  – Grabs
  – Drum lifters and loaders
  – Counterbalance forklift trucks
  – Reach trucks
  – Vacuum lifters
  – Roller systems
  – Conveyor systems
  – Cranes
  – Carousels
  – Stacker cranes
  – Access to higher levels
    (a) Ladders
    (b) Step sets
    (c) Platforms
    (d) Scissor platforms
  – Waste storage and compression
  – Weighing
  – Weighbridges
  – Floor scales and platform scales
  – Conveyor belt scales
  – Forklift and pallet truck scales
  – Load cells

– Suspended balance and crane scales
– Counting scales

- Checking dimensions and volume
  – Racking and storage
- Palletisation and unit loads
  – Palletisation principles
  – Unit load principles
  – Skids
  – Slip sheets
- Packing and packaging
  – Cardboard boxes
  – Cardboard pick trays and boxes
  – Labelling and handling instructions
  – Void filling
  – Edge and corner production of packing
  – Product trays
  – Layer pads and layer tray
  – Protective sleeving
  – Packaging and wrapping tape
  – Heat-shrink wrap
  – Pallet wrapping
  – Strapping
- Environmental standards for packaging
  – Regulations on packaging
  – Standards
    (a) ISO 18601
    (b) ISO 18602
    (c) ISO 18603
    (d) ISO 18604
    (e) ISO 18605
    (f) ISO 18606
- The use of automation in warehousing:
  – Warehouse management system, smart glasses, automated guided vehicles
  – Picking system guidance and ‘smart glasses’
  – Stock maintenance
  – Packing
  – Fixed asset (equipment) control
- Make automation choices and decisions

2. Understand the key elements of effective inventory control

2.1. Differentiate between the different classifications of inventory

a. Opening stock – Closing stock

b. Raw materials, work in progress (WIP) and finished goods

c. Considerations at each stage of the production process

d. Safety stock

e. Obsolescent and redundant stock

- Definitions
- Impacts and costs
- Causes
- How to deal

f. Direct and indirect supplies

g. ABC classifications of stock

- How to establish ABC classification
- Implications of ABC classification

h. Dependent demand and independent demand items of stock

2.2. Identify the direct and indirect costs of holding inventory

a. Acquisition costs

- Preliminary costs
- Placement costs
- Post-placement costs

b. Holding costs

- Costs related to the value of the goods
- Costs related to the physical characteristics of the inventory

c. Costs of stockouts

d. Options to reduce costs while mitigating any negative impact on service levels

- Using lead times and costs of holding as part of price evaluation
- Strategically placed safety stock
- Increase overall inventory levels
- Understanding demands and seasonal/ad hoc fluctuations leading to more accurate forecasting
- Sourcing decisions based on supplier performance, not just purchased prices
- Using KPIs to improve supply performance and eliminate the bottlenecks
- Robust supplier relationship management using agreed KPIs to drive continuous supply chain improvements

2.3. Identify techniques associated with inventory control

a. Subjective and objective forecasting

- Subjective forecasting
  - Delphi method
  - Market survey
  - Employee surveys
  - Expert knowledge
  - Test marketing
- Objective forecasting
  - Moving average
  - Weighted average
  - Bullwhip effect

b. Reorder quantities and levels
- Fixed-quantity orders
- Economic order quantity
  - Formula
  - When it works best
- Periodic review systems
- Choice of method

c. MRP and MRP II
- MRP process overview
  - Bill of materials
  - Master production schedule
  - Inventory information
  - Benefits of MRP
  - Suitable applications
- MRP II: Definition
- MRP II: process overview and contrasts with MRP
- Enterprise Resource Planning (ERP)
  - Definitions
  - ERP capabilities
  - Advantages
  - Disadvantages

d. Just in time
- What is just in time
- Benefits of just in time
- Kanban
- Determinants for success of JIT
- JIT II
- Lean
- Value stream mapping tools

e. Inventory performance measure

3. Understand the concept of through life cost

3.1. Analyse the contributing factors when establishing total cost of ownership

a. Purchase price

- Fixed price
- Market price
- Adjustable price
- Use of ‘reference indices’
- Discounted price
- Promotional price
  - Linked promotions
  - Order value promotions
  - Free issues promotions
- Payment arrangements and payment in advance
  - Payment in advance
  - Delayed payment
  - Consignment stocking
- Volume-based pricing
- Multi-part pricing
  - Fixed sum payable
  - Usage fee
- Delivery costs
- Retrospective volume discounts

b. Hire and lease

- Factors to be considered when purchase – hire – lease
- Hire
- Lease

c. Acquisition costs

- Definition
- Site preparation
- Installation
- Acceptance testing
- Reducing acquisition costs
  - Buyer discretionary spend
  - User buying
  - Vendor managed inventory
  - Two-bin Kanban
  - Product catalogue
  - E-procurement techniques

– Procurement cards

d. Usage costs

e. Maintenance costs

- Corrective maintenance
- Scheduled servicing
- Bought-in and self-maintained options
- Replacement and spare parts
- Service-included and maintenance-included packages
- Guarantees, warranties and extended guarantees and warranties
- Total productive maintenance concept (TPM)

f. Operation cost

- Cost of operating capital assets
- Cost of facilities management
- Cost of heating, cooling, air conditioning and lighting
- Cost of consumables

g. Cost of utilities

h. Training

i. Disposal and end-of-life costs

- Classification
  - – Obsolete stock
  - – Redundant stock
  - – Surplus stock
  - – Scrap stock
- Accounting period
- Legal obligations
- Costs

3.2. Compare the factors to consider when building a total cost of ownership model

a. Include all costs

- Finance costs
- Detailing costs, budgeting, and investment appraisal

b. Use best estimates of values available

c. Hidden costs – global sourcing, risks associated with extended supply chain

- Country risk
  - – Government actions
  - – Higher taxes
  - – Restrictions
  - – Infrastructure failures

– Civil unrest
– Human right issues
– Natural disasters…

- Logistics and transport issues
  – Risk and costs of transport
  – Methods of transport
  – Distance and time
  – Export/import duties
- Contractual issues
- Currency issues
- Ethical issues
- Translation costs
- International payment costs

d. Only develop for larger purchases
e. Ensure senior management support
f. Cross-functional support
g. Teamworking – reduce data collection time

3.3. Identify the contributing elements to end-of-life costs

a. Policies and procedures for end-of-life assets
b. Decommissioning
c. Removal or disposal processes

- Risk assessment process
- Environmental risk assessment process
- Health and safety risk assessment process
- Selection of specialist suppliers
- Processes relating to sale of assets
- Accounting for the disposal of fixed assets

d. Legal aspects – waste management
e. Environmental factors
f. Triple bottom line – people, planet, profit

If you need to check your skills, use my practice tests as your reference:

1. **L4M1:** https://en.evocurement.edu.vn/product-category/evocurement/l4m1-practice-tests/
2. **L4M2:** https://www.udemy.com/course/cips-diploma-l4m2-practice-test/?referralCode=D6857E569E583169D7E6
3. **L4M3:** https://www.udemy.com/course/cips-diploma-practice-test-commercial-contracting/?referralCode=A5F71CD5C684538996EB

4. **L4M4:** https://www.udemy.com/course/cips-diploma-practice-test-ethical-responsible-sourcing/?referralCode=00CB8A48071CD88E9BE8
5. **L4M5:** https://www.udemy.com/course/cips-practice-test-commercial-negotiation/?referralCode=919D1BDB285AFA4CB55A
6. **L4M6:** https://www.udemy.com/course/cips-diploma-practice-test-supplier-relationships/?referralCode=76AF6ECB83302BBF245F
7. **L4M7:** https://www.udemy.com/course/level-4-diploma-whole-life-asset-management-l4m7/?referralCode=C95CAF196D8460C1A86F
8. **L4M8:** https://en.evocurement.edu.vn/product-category/evocurement/l4m8-practice-tests/