**Exam-style questions mark scheme**

1. **Define the terms ‘stock’ and ‘assets’ in the context of inventory management.   
   (2 marks)**

**Example answer:**   
Stock refers to the goods or materials a company owns that it needs to carry out its business. Stock is anything tangible that is made or processed. For example, goods or raw materials – which the company’s product is based on; or completed, manufactured or repaired items which have not been sold, or paid for.

Assets are things that a company owns to do business and/or create stock, such as cash, equipment, vehicles, trademarks, computers, desks, etc. People who work in a company are also assets.

**Marking guidance:**

* Award 1 mark for correct definition of stock in an inventory context and 1 mark for correct definition of asset in an inventory context

1. **Explain two disadvantages of holding excess stock in a manufacturing business.   
   (4 marks)**

**Example answer:** (any two from)

* Increased storage costs, including warehouse costs including utilities, labour costs for managing and handling the excess inventory and insurance costs to cover the value of the stored good.
* Excess stock is more susceptible to becoming obsolete, outdated, or going out of fashion, especially in industries with rapid technological advancements or seasonal products. For perishable goods, overestimation can lead to significant losses due to spoilage.
* Money will be tied up in the excess stock, reducing cash flow making it less available for other uses such as paying bills, investing in new opportunities and covering unexpected cost.
* Potentially higher transport costs – While overestimation might not always increase transport costs, it could if you initially expedite large orders from suppliers based on the inaccurate forecast.

**Marking guidance:**

* For each disadvantage award 1 mark for stating the issue, with a second 1 mark for the supporting explanation.

**3. Kanban is a visual management tool used in just-in-time (JIT) manufacturing to improve workflow and efficiency. Explain how Kanban supports JIT production, including its key principles. Provide an example of Kanban in action. (6 marks)**

**Example answer:** Just-in-time (JIT) production involves producing goods only when needed. Production is triggered by customer demand. Using kanban cards in inventory control supports JIT production as stock does not need to be manually reordered. The kanban card triggers a reorder automatically at a point in the system where it will arrive just in time so that there is no overstocking or understocking. It is set to trigger an order depending on the lead time, batch size and amount of the stock used per day.

Kanban is used in JIT manufacturing by a lot of large companies, including Toyota who first implemented kanban cards. Along with other strategies they are used to reduce waste in their car manufacturing process. They are used to replenish stock at just the right time to streamline the process and reduce waste.

**Marking guidance:**

* 1 mark for stating what Kanban is
* 1 mark for stating the key principles
* 1 mark each for describing how kanban is used, up to the maximum of 3 marks
* 1 mark for a valid example.

1. **Evaluate the impact of poor stock management on a manufacturing company’s efficiency and profitability. Provide examples to support your answer. (6 marks)  
     
   Example answer:** Stock management issues can occur due to failure to properly track, organise and maintain stock. If stock levels are not accurate and there is not enough stock, this could lead to issues fulfilling orders, impacting on efficiency, profitability and reputation. If too much stock is ordered this can cause issues with storage, stock potentially perishing or becoming outdated as well as issues with money being unnecessarily tied up in excess stock. This can all impact the efficiency of a business and its potential profitability.   
     
   For example, some British supermarket retailers had issues with their inventory system showing stock that was not there. These inaccuracies were caused by various factors including poor process compliance, mis-scanned items and theft. This issue led to customers being able to order stock that did not exist, leading to customer disappointment and lost sales, impacting profitability. It also resulted in wasted labour when staff went to look for an item that was not in store, impacting efficiency. Poor stock management can be prevented by accurate demand forecasting, utilising inventory management software, implementing a just-in-time system of inventory control and conducting regular inventory audits.

**Marking guidance:**

* 1 mark for stating the impact on a company’s efficiency with a second 1 mark for a supporting reason;
* 1 mark for stating the impact on a company’s profitability with a second 1 mark for a supporting reason;
* 1 mark each for two valid examples, or for a valid example given in depth.

**5. A manufacturing company is considering switching from a made-to-stock (MTS) production system to a just-in-time (JIT) system to improve efficiency and reduce costs.**

**(a) Evaluate the benefits and risks of this transition. (6 marks)**

**Example answer:**

There are both benefits and risks to the transition between MTS to JIT for a manufacturing company. The benefits include reduced inventory costs as JIT minimises the amount of stock being stored so potentially lowering storage costs, reducing the risk of items perishing/becoming outdated and lowering the amount of money tied up in stock.

JIT can also streamline the production processes, reducing waste, improving resource utilisation and potentially shortening lead times. It also allows companies to respond quicker to changes in demand as they old lower inventory levels, allowing them to adapt to market trends and become more responsive to customer needs.

However, the way that JIT is set up means that any disruption to the supply chain, such as delays or shortages, has the potential to have a quicker and more severe effect on production as less stock is being stored. JIT can also involve significant upfront costs if new systems, training and processes are needed. The coordination between different parts of the production process and with suppliers is crucial for JIT, which can be complex and challenging to manage.

**Marking guidance:**

* 1 mark for stating a benefit and a second 1 mark for an explanation
* 1 mark for stating a risk and a second 1 mark for an explanation
* 1 mark for giving either a second benefit or risk, with the final 1 mark for the supporting explanation of that.

**(b) Provide recommendations on how the company can successfully implement JIT while minimising risks. (6 marks)**

To minimise the risk of moving from MTS to JIT the company could implement the change gradually. If multiple products are being manufactured they could move a small number of less crucial products to the JIT system first to test the process to mitigate risk. In the short term the company could carry a small amount of excess stock while the JIT system is being tested as contingency in case of unforeseen issues. They should also consult staff and other stakeholders for their input before and during the transition, as their flexibility during the change will be important and communication may reduce resistance to the operational shift. If the manufacturing company sell their products to another business, rather than straight to consumers, they may be able to work with them to reduce large fluctuations in orders by agreeing order numbers in advance especially during the transition between MTS and JIT.

The transition from MTS to JIT is likely to be a lot of work upfront in putting processes in place, including setting up new ways of working with suppliers including sharing data regarding stock levels, setting up a pull system such as kanban cards, training staff on new systems and problem solving so the company should be confident that the advantages in the long term outweigh the short term cost.

**Marking guidance:**

* 1 mark each for three recommendations
* up to 3 marks for explanation or justification of these points.