Answers

1. A mobile phone company design their phones in the USA. The products are then manufactured in China. The manufacturing process has a heavy use of automation   
   and robotics.

(a) Explain an impact of using IT systems in manufacturing. [2]  
  
More automation (1) results in lower salary costs (1) repetitive jobs can be carried   
out by machine (1) resulting in staff being redeployed to more stimulating roles (1) larger initial investment (1) makes it costly to start a business (1).

(b) Explain **two** reasons how the use of automation and robotics in the manufacture   
of the phones helps the company. [4]  
  
machines and robots can work 24/7 / don’t need to be paid (1) so this can increase   
the profitability of the company (1).

Robots and machines can work faster than people (1) so will be able to fulfil orders faster / decrease costs of employment (1).

Robots and machines can be more accurate for intricate work (1) so there will be a lower chance of manufacturing errors (1).

Or any other reasonable advantage

(c) The mobile phone company wish to keep their designs and new products secret   
until they are launched. As such, they do not want any photos of products to be  
 taken by workers in the factory. The phones are also expensive, and they do not   
want them to be stolen.  
  
Discuss how the company can protect their intellectual property and products   
from being stolen from the factory. [6]

* All employees’ backgrounds can be checked to see if they have worked for competitors or had incidents of theft/industrial espionage before
* CCTV can be installed and monitored
* RFID tags can be used on products. Employees will need to go through scanners   
  on exit to see if they have any products on themselves
* No mobile phones/digital cameras can be used within the factory to prevent   
  photos being taken
* Employees can go through a metal scanner, like used in an airport, to see that   
  they have no objects that could be used to take photos
* Security guards could be employed to protect products and see that no one is stealing intellectual property
* IT systems that store designs need to have security updates run
* Servers and internal networks need to be protected by firewalls and anti-virus software
* Key equipment and products need to be in locked cabinets / locked storage areas   
  so that the majority of employees do not have access to them
* Employees must wear an ID card at all times
* Employees must scan their ID card / use a biometric scanner to access the building – this will also enable them to be recorded as on/off site, which will be helpful if trying to establish who was involved in a theft
* External monitoring of the factory by a 3rd party or the USA company will be needed to ensure that the systems are acceptable and maintained

| **Level** | **Mark** | **Descriptor** |
| --- | --- | --- |
| Level 0 | 0 | No rewardable material. |
| Level 1 | 1-2 | Technical vocabulary is used but it is not used appropriately to support arguments, in relation to the issues of the question.  Issues are identified but chains of reasoning are not made, leading to a superficial understanding. |
| Level 2 | 3-4 | Accurate technical vocabulary is used to support arguments but not all arguments are relevant to the issues of the question.  There is consideration of relevant issues using logical chains of reasoning.  Considers the various elements of the question. |
| Level 3 | 5-6 | Fluent and accurate technical vocabulary is used to support arguments that are relevant to the issues of the question.  There is a balanced and wide-ranging consideration of relevant issues, using coherent and logical chains of reasoning that shows a full awareness.  Carefully considers the various elements of the question. |

(d) The mobile phone company use a stock control system for all mobile phones that have been manufactured.  
  
Describe how the stock control system is used. [2]  
  
Each product that is made can be stored in the system (1) with its product serial number (1) and other details / name / description (1). The company will then be able   
to know how many products have been manufactured / are being shipped / are in   
each store (1). The system will be able to monitor the stock levels and order more when they get below a certain level (1).

(e) The mobile phone company make use of advertising on their **website**, **social media** **channels** and **traditional media**.  
  
Discuss how they can make effective use of IT systems for advertising   
their products. [6]

**Website**

* Track users who use their site / number of users / time spent on each page
* Show information about the products with good quality imagery
* Show the features of products and how they will solve problems for potential customers
* Give case studies or user experiences
* Links to favourable reviews
* Track where users most interact with web pages / hover mouse so that the most important features can be logged. These can then be used more prominently in future advertising

**Social media**

* Make product videos for video streaming sites such as YouTube
* Send free products for review to influencers
* Use social media to build anticipation of future products
* Interact with users to answer their queries about future products

**Traditional media**

* Support other campaigns with print media advertisements
* These can be produced using desktop publishing software or image editing software
* IT can enable, with cloud computing/storage and email to allow photos/images   
  and the adverts to be sent electronically. This allows the opportunity to make last minute changes
* Improvements in camera technology (HD/4K) allow products to be filmed in much higher quality, which gives customers a better sense of the product

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[Total 20 marks]