

Answer ALL questions. Write your answers in the spaces provided.

1 Hardeep is a designer for a small engineering company that produces specialised machine parts.

He visits clients to discuss their requirements and to show them his designs.

He usually travels by train to visit clients.

When travelling by train Hardeep uses a laptop to work on his designs. He uses the mobile data connection on his phone to connect to the company's VPN.

(a) Explain **two** problems that Hardeep may have while using a mobile data connection when travelling by train.

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(b) Hardeep uses the VPN to ensure that his files are kept secure while working on the train.

(i) Explain **two** methods used to ensure that files accessed via the VPN are kept secure during transmission.

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(ii) Hardeep's company has a password policy that must be followed to increase the security of passwords.

One rule of the policy requires users to change their passwords every three months.

Explain **two** other rules that would increase the security of passwords.

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(c) Hardeep uses a range of peripheral devices with his laptop.

The laptop operating system is responsible for the management of these devices.

Describe how the operating system manages peripheral devices.

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(d) Hardeep uses specialist software to design the machine parts for clients.

The company is considering upgrading the software. The software upgrade will be expensive to purchase.

Discuss the factors, other than cost, that the company should consider before upgrading to the new software.

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(Total for Question 1 = 24 marks)



2 Alpha Training is an agency that provides training courses for a range of vocational subjects.

The agency has a building with an administration office and training facilities.

There is a Local Area Network (LAN) serving all areas of the building.

The computers in the administration office are connected to the LAN using Ethernet cables.

The agency has a large number of laptops which can connect wirelessly to the LAN.

(a) The laptops are often used by students with visual impairments. The agency must make sure these learners are able to use the laptops.

(i) Explain **two** accessibility features provided by an operating system that can assist users with visual impairment.

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(ii) Describe how **two** peripheral devices can be used to improve accessibility for visually impaired users.

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(c) The agency is considering introducing an emerging technology to improve learner experience.

Discuss the factors that the agency need to consider before introducing an emerging technology.

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3 PRR Sports is a chain of stores selling sports footwear.

Each in-store stock room holds a range of footwear.

Sales staff use tablet computers to communicate with staff in the in-store stock room to check the availability of stock.

The in-store stock room has a PC that is connected to the company warehouse.

Stock room staff use the PC to access the server in the main warehouse.

Electronic Point of Sale (EPOS) terminals are used by sales staff to complete sales and process customer payments.

Stock is ordered automatically to maintain appropriate stock levels within the store.

(a) Draw a diagram to show how the stock control system works.

The diagram should include:

- devices and systems that could be used
- devices to be connected and the connection type(s) used
- the flow of data through the system
- annotations indicating the information and data to be passed between systems, devices and users.

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Use this space to draw your diagram for Q3a.

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(b) EPOS terminals provide an automated system for processing customer sales.

(i) Describe how the sales data is used to update the stock control system.

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(ii) Explain **one** impact on PRR Sports of using an automated stock control system.

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(c) PRR Sports is considering upgrading the system used by sales staff to allow them to order goods for customers directly from the warehouse.

The sales staff will enter details of customers and their orders into their tablets.

One screen in the process will collect information about the item(s) a customer wishes to order.

The table shows part of the data dictionary for this screen.

Field name	Field length	Data type
Item ID	8	Text
Item Description 1	15	Text
Item Description 2	15	Text
Colour	10	Text
Number ordered	2	Number
Price	7	Currency

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(i) In the space provided, draw a suitable user interface for this screen.

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(ii) The system will also collect the customer's personal details. The data will be stored on the company server.

In order to comply with the Data Protection Act 1998 (DPA) the details stored must be accurate and kept up-to-date.

Explain **two** methods that could be used to ensure the data is accurate and kept up-to-date.

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4 Ay-to-Bee travel agency offers a wide range of holidays for customers across the UK. They have high street stores in several cities and also provide an online booking service. The agency is considering moving to an online-only booking service.

- (a) Before making the move to an online-only booking service Ay-to-Bee would like to gather the opinions of existing customers.

The agency has previously gathered information from customers by carrying out interviews in their stores.

The agency is considering different ways of collecting information and would like to trial online surveys and face-to-face focus groups.

Discuss the implications of using online surveys and face-to-face focus groups.

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(b) After carefully considering the opinions collected from customers, the agency has decided to move to an online-only booking system.

Evaluate the implications of the move to an online-only booking system for Ay-to-Bee travel agency and their customers.

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TOTAL FOR PAPER = 90 MARKS

