Digital environments assessment – Questions

Q1. In the TCP/IP model, protocols are organised into layers. One of these layers is

the transport layer.

1. Name **one** protocol that operates in the transport layer.

1. Name **one other** layer in the TCP/IP model.

Q2. A Redundant Array of Independent Discs (RAID) is a virtualisation technology

used for data storage. Describe how RAID 10 stores data.

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Q3. A company is developing a new smart doorbell system.

The doorbell will connect wirelessly to the internet via the owner’s home network. The doorbell is automatically activated when it detects motion and the owner will get instant notifications on their smartphone.

The system will allow the owner to see, speak to and hear visitors using the smartphone app.

The doorbell will contain input and output devices.

Explain **one** inputdevice that could be used in the doorbell.

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Q4. Data is transmitted across a network in packets.

State **one** field that is typically contained in a packet header.

Q5. Describe **two** features of Integrated Development Environments (IDEs).

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Q6. An airline operator uses a computerised system.

The system allows passengers to check whether a flight has available seats and

to reserve and book particular seats on a flight.

These systems run a real-time operating system.

Explain why a real-time operating system is suitable for this purpose.

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Q7. Complete the table to correctly identify the type of main memory

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|  | Stores the boot sequence set by the manufacturer. Is read only and non-volatile, meaning that stored data is not lost when the device is switched off. |
|  | Stores data and instructions during processing. Is read and write, and is volatile, meaning that data is lost when the device is switched off. |

Q8. An architectural company designs buildings. Its employees work both in the office

and from home.

To accommodate this hybrid way of working, the company is planning to use a

cloud-based storage solution.

Explain **one** risk associated with cloud storage that the company should consider.

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Q9. A local council runs public libraries at several locations. As well as having a stock

of books, each library has several computers that can be used by the public. The

computers can be used to search the library book catalogue as well as for

personal use and to access the internet.

The council is under constant pressure to limit its spending to keep the rate of council tax as low as possible.

Evaluate the suitability of a thin client networkfor use in the library.

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Q10. A coffee shop chain has decided to install tablet devices at the point of exit from

their stores. The devices will be used to collect feedback from customers on the

customer service they have received during their visit.

The tablet devices will allow the customers to rate their experience by selecting an appropriate emoji and will also offer customers the opportunity to provide more detailed feedback by typing in text.

Evaluate the suitability of using tablet devices for this purpose.

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