Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION TECHNOLOGY **9626/33**

Paper 3 Advanced Theory **May/June 2025**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS
- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.
- Calculators must **not** be used in this paper.

INFORMATION
- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages.

[Turn over

1 Network protocols are sets of rules that determine how data is transmitted on a network so that devices can communicate with each other.

Describe the use of each of these network protocols.

(a) Telnet

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(b) Layer 2 Tunneling Protocol (L2TP)

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(c) User Datagram Protocol (UDP)

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2 A project to build a new government building is starting. The project's life cycle starts with the initiation stage and ends with the project close stage.

(a) Describe the tasks that are usually carried out during the initiation stage.

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(b) The project is completed and reviewed during the project close stage.

Explain why the project is reviewed.

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3 A system specification is written when a new system is to be designed and developed.

Describe the purpose of the system specification.

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.... [6]

4 A mobile (cell) phone service provider is sending emails to all of its customers. The email informs each customer of changes to their individual contract.

Justify the use of mail merge to create the emails.

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.... [6]

5 A blockchain is a list of records linked securely together.

(a) Blockchains contain the records and the cryptographic hashes used to secure the records.

State **one** other item of data that makes up the blockchain.

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(b) Describe **two** uses of blockchain technology.

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6 Data may have to be prepared by transformation and cleaning before it can be analysed.

(a) Describe **two** reasons why data transformation is necessary.

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(b) Describe how data may be cleaned.

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7 Compression is applied to digital images for many reasons.

Evaluate the use of compression on digital images.

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8 Peer-to-peer electronic monetary systems can be used instead of cash money to make payments.

Describe the advantages and disadvantages of peer-to-peer electronic monetary systems.

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9 Cloud computing is used by banking organisations.

Describe the drawbacks to banking organisations of using cloud computing.

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10 Individuals and businesses can use a virtual private network (VPN) to create a point-to-point connection between two computing devices over a public telecommunication system.

Justify the use of a VPN.

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11 (a) Explain how 3D printing can have a positive impact on the environment.

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(b) Explain how 3D printing can have a negative impact on the environment.

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