



Cambridge International AS & A Level

CANDIDATE
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INFORMATION TECHNOLOGY

9626/32

Paper 3 Advanced Theory

February/March 2023

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. Any blank pages are indicated.

- 1 Cellular networks use 3G, 4G and 5G systems for mobile communications so that users can access internet services.

- (a) Explain how 4G cellular networks provide a better service than 3G networks for smartphone users accessing internet services.

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[4]

- (b) Describe **two** features of 5G mobile communication systems that make them suitable for connecting smart devices together into large networks.

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[2]

- 2** Contrast the use of Wi-fi and cabled Ethernet connections for transmitting data between computing devices on LANs.

[6]

- 3** Compare the use of static and dynamic routing when sending data packets through IP networks. You must include similarities and differences.

[6]

[6]

4 A newly developed computer system is being evaluated for ease of use.

- (a) Describe **four** aspects of the ease of use of the new system that could be examined in the evaluation.

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- (b) Describe **two** other purposes of an evaluation of the new system.

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- 5** A retail company has a computer system used by all of its departments. Pilot running will be used to implement a new computer system.

Discuss the benefits and drawbacks of using pilot running to implement the new system.

[8]

- ## **6** Describe how news organisations use social media.

[6]

[6]

- 7 A Work Breakdown Structure (WBS), included in the Performance Evaluation and Review Technique (PERT), is created during the planning of a project.

(a) Explain the purpose of a WBS.

[2]

[2]

(b) Describe the characteristics of a well designed WBS.

[4]

- 8** JavaScript code can be written to perform different actions depending on different conditions.

(a) Describe the use of the switch operator, such as `switch (name)`, in JavaScript code to select different actions.

[4]

[4]

- (b)** Describe the use of logical operators in conditional statements in JavaScript code.

[6]

- 9** Evaluate the use of prototyping in software development.

[8]

- 10** A digital camera captures bitmap images. These images can be converted into editable vector shapes.

(a) Describe how a bitmap image is converted into editable vector shapes.

[2]

[2]

(b) Vector images can be used on web pages.

Discuss the advantages and disadvantages of using a vector image with editable shapes instead of a bitmap image.

[61]

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