



Cambridge International AS & A Level

CANDIDATE
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INFORMATION TECHNOLOGY

9626/31

Paper 3 Advanced Theory

October/November 2021

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 90.
- The number of marks for each question or part question is shown in brackets [].

This document has **16** pages. Any blank pages are indicated.

(b) Describe **two** drawbacks of using online questionnaires to gather feedback.

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..... [2]

2 QR codes are two-dimensional bar codes (matrix bar codes) representing information about items to which they are attached. An example of a QR code is shown:



(a) Describe the functional elements of a QR code.

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- (b) Explain why damaged QR codes may still be read while damaged one-dimensional bar codes often cannot be read.

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- 3 Peer-to-peer networking can account for a large percentage of all internet traffic. It is often used to transfer large files.

- (a) Describe how peer-to-peer networking uses BitTorrent to transfer large data files between several users.

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(b) Describe how the use of BitTorrent for peer-to-peer networking can cause security issues to arise.

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[6]

7 Web-conferencing is used to enable people to work together to produce documents.

(a) Describe, in detail, the hardware that is required for web-conferencing.

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(b) Describe the features of web-conferencing software.

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11 Images of the faces of people can be manipulated and changed by morphing.

Describe how morphing could be used to change an image of a sad face into a smiling face.

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12 Describe how augmented reality could be used by firefighters.

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