Cambridge International AS & A Level
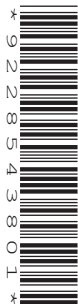
CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION TECHNOLOGY **9626/32**

Paper 3 Advanced Theory **October/November 2020**

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. Blank pages are indicated.

[Turn over

1 (a) Explain the meanings of these terms when referring to JavaScript objects.

(i) string

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.... [1]

(ii) global

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.... [1]

(iii) regular expression

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.... [1]

(iv) operator

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.... [1]

(v) statement

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.... [1]

(b) Describe, in detail, the use of **console.log()** in JavaScript to output data for display.

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2 Routers are components that send internet protocol (IP) packets through computer networks.

Describe how each of the following are used in the routing of the IP packets.

(a) static routing tables

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(b) dynamic routing tables

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3 A new database management system (DBMS) has been created and fully tested by a software developer. Technical documentation has been produced for the DBMS to assist with its maintenance.

(a) Describe the features of alpha and beta testing.

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(b) Explain why, apart from assisting with testing and software maintenance, technical documentation is needed.

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(c) Explain why maintenance should be carried out on the DBMS.

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4   A store that sells and delivers furniture is installing a new ordering and booking computer system to replace its old computer system. The direct changeover method of implementation will be used.

(a) Describe, in detail, the steps that need to be taken to prepare for the changeover and the steps that need to be taken after the changeover.

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(b) Give **two** reasons why direct changeover is a suitable method of implementing the new system.

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(c) Give **two** reasons why direct changeover might **not** be a suitable method of implementing the new system.

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5 An online financial services company uses biometrics as part of its security measures to control access to its services.

(a) Describe how fingerprints would be used to allow access to these services.

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(b) Evaluate, by weighing up the advantages and disadvantages, the suitability of biometrics in controlling access to company services.

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6 Discuss the advantages and disadvantages of using data mining to analyse social trends.

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7 **(a)** Explain how project management tools can be used when planning a project.

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(b) Discuss the advantages and disadvantages of using online project management software.

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8   Describe how robotics are being used in space exploration.

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9   Describe the use of fourth (4th) generation optical data storage systems to store and retrieve data.

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