Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER					

8290446528

INFORMATION TECHNOLOGY **9626/33**

Paper 3 Advanced Theory **October/November 2017**

1 hour 45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

Any businesses described in this paper are entirely fictitious.

This document consists of **13** printed pages and **3** blank pages.

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1 A new open-source operating system for smartphones is being developed. Prototypes are being constructed.

(a) You have helped to develop the new operating system and are now ready to test it. You have to create a test plan.

(i) Explain the importance of having a test plan.

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(ii) Describe, in detail, the testing strategy that would be carried out on this open-source operating system.

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(iii) Discuss the benefits and drawbacks of the black box method of testing software.

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2 Discuss the benefits and drawbacks of using computer-aided manufacturing (CAM) to produce the prototype of a new tail fin for a racing car.

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3 A new computer system is to be installed by a company to replace its existing system. A systems analyst is producing a report on the current operations of the company before the company installs the new computer system. The analyst is interviewing the users of the existing system.

Evaluate other methods that the analyst could use to research the existing system.

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4 A shopper has a bank account, number 65636373, with a balance of $1100. The shopper wants to use electronic funds transfer to purchase a jacket for $159, a video recorder for $699 and a digital camera for $300 from different stores in a retail park. A bank card is used by the customer at the electronic funds transfer point of sale terminal in each store. The card is scanned and the PIN entered and accepted.

Describe, in detail, the processes involved in the electronic funds transfer for these purchases.

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5 A small database is being developed for an online book store that only sells books to people over 21 years of age. The database is to contain a table with the details of customers of the store. The store wishes to hold details of the customers' names, titles, email addresses and postal addresses. It also requires a home telephone number for every customer.

In the space below, create a suitable data dictionary for use when developing the table for the database.

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6 Information technology (IT) has changed the way that people both observe and take part in sports.

Describe how IT has changed the sports experience for people.

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7 A home network uses a router to connect to the internet.

(a) The router will act as a 'default gateway'.

Define 'default gateway'.

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(b) The router uses wireless technology to allow devices in the home to connect to it.

Discuss the benefits and drawbacks of using wireless technology to connect devices to the router.

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8 The tasks, and the time allowed for each task, for the building of a new house are shown in the table below.

Task ID	Task	Duration (days)
A	lay the foundations	3
B	build the external walls	4
C	put on roof	7
D	install external doors and windows	2
E	make doors and windows	5
F	install utilities	6
G	paint interior	5
H	install interior walls	3
I	install interior doors	2
J	finish exterior	4

These tasks must be carried out in this order: A, B, C, D, H, I and J.
Task E can be carried out at the same time as Tasks A, B and C but must be carried out before Task D.
Task F must be carried out after task C and before task I but can be done at the same time as tasks D and H.
Task G must be done after tasks F, H and I but can be done at the same time as task J.

(a) Draw an activity network diagram for building the new house.

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(b) Use your activity network diagram to calculate the critical path through the tasks.

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9 Project management involves decision-making.

Describe how you would use software tools to assist in decision-making.

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10 Computers can be used to edit images for advertising features in a printed magazine.

Describe the use of image editing techniques to alter images for use in advertising products.

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