



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Level

CANDIDATE
NAME

CENTRE
NUMBER

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CANDIDATE
NUMBER

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APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/31

Paper 3

October/November 2012

1 hour 15 minutes

Candidates answer on the Question Paper.

No additional materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, highlighters, glue or correction fluid.

You may use a pencil for any diagrams, graphs or rough working.

DO NOT WRITE IN ANY BARCODES.

Answer **all** questions.

The number of marks is given in brackets [] at the end of each question or part question.

The businesses described in this paper are entirely fictitious.

This document consists of **20** printed pages.



Scenario 1
Questions 1 and 2

*For
Examiner's
Use*

José runs a car rental business. Cars can be picked up from one garage and returned to another. Each car is fitted with a Satellite Navigation system (Sat Nav).

1 (a) Explain how a Satellite Navigation (Sat Nav) system operates.

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..... [3]

(b) Describe **two** benefits and **two** drawbacks of the use of Satellite Navigation (Sat Nav) by the car rental business.

Benefit 1
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Benefit 2
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Drawback 1
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Drawback 2
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..... [4]

2 José is thinking of introducing an intranet.

(a) Describe **three** ways this would be of use to him.

Way 1

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Way 2

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Way 3

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[6]

(b) The intranet will be part of a Wide Area Network (WAN).

Give **two** features of a WAN.

Feature 1

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Feature 2

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..... [2]

*For
Examiner's
Use*

Scenario 2
Questions 3, 4 and 5

*For
Examiner's
Use*

Peter likes watching films. Sometimes he watches a film on his home entertainment system.

At other times he arranges visits to the cinema. He will use an online cinema booking system with a secure method of payment. He will collect the tickets from a kiosk at the cinema.

The cinema booking system uses various methods to ensure the security of the personal data of its customers.

3 Describe, in detail, **four** features of a home entertainment system.

*For
Examiner's
Use*

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..... [4]

4 (a) (i) Give **four** items of information that Peter would input into the web page in order to book a cinema ticket, explaining why each one is needed.

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(ii) Apart from the information that Peter will have input, describe **three** items of information that will appear in the confirmation.

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..... [3]

(b) State **three** features which should be provided on the website for Peter to show him that there will be a secure transaction.

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[3]

(c) Describe how the computer system produces the tickets.

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[4]

5 Describe **two** features of each of the following security methods:

(a) Encryption

Feature 1

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Feature 2

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..... [2]

(b) Digital Certificate

Feature 1

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Feature 2

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..... [2]

(c) Authentication

Feature 1

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Feature 2

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..... [2]

Scenario 3
Question 6*For
Examiner's
Use*

Sarbjit is the director in charge of research at the International Medical Drug Corporation (IMDC). The corporation wishes to develop a new medical drug. Sarbjit carried out market research to find out how many people would use the drug. He had a choice of two types of market research: primary and secondary.

Having had favourable feedback, the corporation decided to carry out the necessary scientific research to make the drug.

6 (a) Explain the difference between primary market research and secondary market research.

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..... [2]

(b) Describe **three** ways in which primary market research can be carried out.

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..... [6]

(c) (i) State the type of computer that would be used in the **scientific** research.

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(ii) Describe how computer models would be used in the **scientific** research.

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..... [3]

For
Examiner's
Use

Scenario 4
Questions 7, 8, 9 and 10

*For
Examiner's
Use*

A number of doctors in a medical centre use an expert system to help diagnose patients' illnesses.

The doctors would like to have a pharmacy with a computerised stock control system in the medical centre. The stock control software could be purpose-written or could be an off-the-shelf package.

The pharmacy staff will need to be trained in the use of the new stock control system.

The project, to set up a pharmacy within the medical centre, will be managed using project management software.

7 (a) Describe how the knowledge engineer would have collected information for the knowledge base of the doctors' expert system.

*For
Examiner's
Use*

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(b) Describe **two** items of information that a doctor will enter into the expert system.

*For
Examiner's
Use*

Item 1

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Item 2

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..... [2]

(c) Describe **two** outputs from the expert system.

Output 1

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Output 2

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..... [2]

9 (a) What is meant by each of the following?

Computer aided instruction (CAI)

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Computer based learning (CBL)

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Computer aided assessment (CAA)

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..... [3]

For
Examiner's
Use

(b) Describe in detail **three** benefits and **three** drawbacks of using ICT for the training of the pharmacy staff.

For
Examiner's
Use

(i) Benefits

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- 2
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- 3
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..... [3]

(ii) Drawbacks

- 1
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- 2
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- 3
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