**a**

**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**
General Certificate of Education Advanced Level

| CANDIDATE NAME | |
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| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | |
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**APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY**      **9713/33**

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 **19** printed pages and **1** blank page.

UNIVERSITY *of* CAMBRIDGE
International Examinations

**Scenario 1**
**Questions 1, 2 and 3**

The ICT manager for South Island Railways (SIR) has different networks to manage including Local Area Networks (LANs) and Wide Area Networks (WANs). In order that staff at different stations can communicate, SIR makes use of a Virtual Private Network (VPN). When the networks were set up consideration had to be given to the ways that computers would communicate with the servers.

SIR has a website which provides information that customers might find useful when planning a journey.

Customers can also use this website to book tickets.

**1    (a)**  State **one** benefit and **one** drawback of each of the following communication methods.

**(i)**  Fibre Optic Cable

Benefit .................................................................................................................

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Drawback .................................................................................................................

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**(ii)**  Copper cable

Benefit .................................................................................................................

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Drawback .................................................................................................................

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**(iii)** Wireless

Benefit .................................................................................................................

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Drawback .................................................................................................................

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**(b)** Describe the actions that take place when a data packet is sent through each of the following.

**(i)** A firewall ....................................................................................................................

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**(ii)** A switch ......................................................................................................................

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**(c)** Explain why SIR uses a VPN for staff communication.

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2 (a) List **four** pieces of information that a customer would expect to have to input in order to book a train ticket, explaining why each one is needed.

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4 ........................................................................................................................................

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**(b)** Describe **two** benefits and **two** drawbacks of online booking to the customer and the company.

Customer

Benefit 1 .........................................................................................................................

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Benefit 2 .........................................................................................................................

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Drawback 1 .....................................................................................................................

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Drawback 2 .....................................................................................................................

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Company

Benefit 1 .........................................................................................................................

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Benefit 2 .........................................................................................................................

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Drawback 1 .....................................................................................................................

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Drawback 2 .....................................................................................................................

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**(c)** Describe, in detail, **three** methods which SIR could use on their website to ensure customer data is kept secure.

Method 1 .......................................................................................................................

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Method 2 .......................................................................................................................

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Method 3 .......................................................................................................................

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3  SIR want to improve their services and need to carry out some market research.

   Describe **three** ways in which computers can be used to help gather data for market research.

   Way 1 ..............................................................................................................................

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   Way 2 ..............................................................................................................................

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   Way 3 ..............................................................................................................................

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**Scenario 2**
**Questions 4, 5, 6 and 7**

The government in Suntiki is concerned about the digital divide amongst its peoples.

They are introducing a program of education for **all** people and want to encourage the more widespread use of computers.

The government wants to provide online application systems for government-issued personal documents.

They also want to manage income tax online.

For
Examiner's
Use

**4 (a)** Explain what is meant by the 'digital divide'.

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**(b)** Describe **three** ways in which the digital divide affects the population.

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Way 2 ........................................................................................................................

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Way 3 ........................................................................................................................

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**5 (a)** Describe the benefits and drawbacks of using computers for teaching and learning.

[8]

**(b)** Explain how ICT systems can be used to monitor students' progress.

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**13**

**(c)** Describe **three** ways that students could use ICT anti-socially.

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Way 2 ......................................................................................

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Way 3 ......................................................................................

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*For Examiner's Use*

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6   (a) (i)   Identify **three** personal documents that could be issued by the Government as a result of receiving an application online.

Document 1 ...............................................................................................................

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Document 2 ...............................................................................................................

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Document 3 ...............................................................................................................

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(ii)   Give **two** advantages to the Government of online personal applications.

Advantage 1 .............................................................................................................

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Advantage 2 .............................................................................................................

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**(b)** Some applicants are concerned that by applying online they may be victims of computer fraud.

Describe **four** ways computer fraud can take place.

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7 (a) Completing an online income tax form requires the entry of personal details such as name, address, phone number etc.

Identify **three** items of financial information that must also be entered.

Item 1 ....................................................................................................................

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Item 2 ....................................................................................................................

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Item 3 ....................................................................................................................

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(b) Describe **two** ways by which individuals could pay their tax bills online.

Way 1 ....................................................................................................................

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Way 2 ....................................................................................................................

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**Scenario 3**
**Question 8**

Cantaria is converting its television provision from terrestrial to satellite.

                                       **[Turn over**

8 **(a)** Describe how TV programmes are currently transmitted in Cantaria.

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**(b)** Describe how satellite television operates.

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**(c)** Explain why Cantaria is converting to satellite television.

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