UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER			

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY   **9713/12**

Paper 1   **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 **17** printed pages and **3** blank pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

Scenario 1
Questions 1 and 2

The North India Motor Company is a manufacturer of cars and vans. It has a modern factory and a computerised production line in New Delhi. Robot arms are used in the manufacture of each car. When Gurdeep, the programmer, programs the robot arm she does not use a remote control to guide the arm. She guides it herself manually.

The company had some bad publicity recently when it had to recall a number of vehicles because of a problem with the brakes. Venkhat, the marketing manager, is keen to improve the company's image but he is limited in the amount of money he can spend on such a campaign because of the cost of the recall programme. Venkhat particularly feels that the company needs to improve its image within New Delhi itself and so has ruled out the use of a website.

1 **(a)** Describe **four** end effectors, other than a screwdriver, in terms of the tasks each would perform in assembling the cars.

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(b) Describe **four** steps in the programming of the robot arm to place and tighten screws inside the car body.

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(c) Describe **three** advantages to the car company of using robot arms rather than humans.

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(d) Describe **three** disadvantages to the car company of using robot arms rather than humans.

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2 **(a)** There are three types of advertising: business, product and service advertising.

Describe these using examples and identify which one would be most appropriate in this scenario.

Business ....

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Product ....

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Service ....

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Most appropriate ....

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.... [4]

(b) Describe **four** advantages of using flyers rather than a website in this scenario.

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Scenario 2
Questions 3 and 4

Redcar Professional Assessment is an examination board. It uses an ICT system to have examination papers marked online. Examiners use their PCs at home to mark the examination papers.

The board would like the reports and certificates produced by the system to be updated and better presented. Subject specialists at the board's three regional offices analyse results and deal with candidate queries. They find the current system difficult to use and need a system that can provide fast and easy access to candidate results.

The board has employed Malcolm, a systems analyst, to develop a new system for storing and analysing results. He has been asked not to look at the marking of examination papers as the board is satisfied that this part of the system works very well. He has already researched the existing system for storing and analysing results. He has recorded the information using data flow diagrams.

The board is aware that new examiners will need to be trained so that they can mark online. These examiners might have difficulties getting to a central venue, so the board has decided to use video conferencing for this training. Each new examiner will be expected to use their own PC including a monitor, mouse and keyboard. Other hardware will be provided by the board if necessary.

3 **(a)** Describe how Malcolm will interpret components of the data flow diagram in order for him to **identify** suitable hardware for the new system.

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(b) Describe, including their use, navigation aids which Malcolm will need to include when designing the screen display for the new system.

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(c) The system will be developed and then tested after it has been designed.

Describe, in detail, **three** ways that Malcolm could test the performance of the navigation aids.

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.... [3]

(d) The system will need to be implemented after it has been developed. Malcolm has rejected the direct changeover method.

Name and describe **three** other methods which could be used and for each one give an advantage when compared with the direct changeover method.

Method 1 ....

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Advantage ....

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Method 2 ....

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Advantage ....

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Method 3 ....

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Advantage ....

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.... [6]

4 **(a)** Describe the purpose of these items of hardware that each new examiner will use in order to take part in the video conference.

Microphone ....

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Speaker ....

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Webcam ....

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.... [3]

(b) Describe **three** benefits to the examiners of using video conferencing for the training.

1 ....

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2 ....

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.... [3]

(c) Describe **three** drawbacks to the examination board of using video conferencing for the training.

1 ....

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2 ....

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3 ....

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Scenario 3
Questions 5, 6 and 7

Cairo Computers, Egypt, has decided to close down some of the stores where it sells its computer hardware. This is because it is expecting many customers will use its online shopping website.

The company will have a call centre which customers will be able to phone if they have a problem with their machines. Operators based at the call centre will offer advice on how to solve the problem.

A number of technicians will be involved in the repair of faulty computers. They will be based at the larger stores.

In order to retain and motivate staff, the company has introduced a number of new working practices for the technicians who are responsible for the repair work. These include allowing technicians to work flexible hours.

5 (a) A customer has selected the computer she wants to buy and details are now in her shopping basket on the Cairo Computers website. She is not registered with the system.

Describe **five** steps, including their purpose, she would have to go through in order to register and pay for the computer.

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.... [5]

(b) Describe **four** benefits to customers who live in Egypt of using Cairo Computers online shopping system.

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.... [4]

(c) Describe **four** drawbacks to the company of online shopping.

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6 (a) Explain what is meant by IVR and describe **three** ways it helps customers speak with the appropriate operator.

IVR software ....

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.... [4]

(b) Describe **four** health problems faced by the operators when using the computer equipment at the call centre.

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.... [4]

(c) Describe **three** safety problems which operators could face when working with computer equipment. Include in your answer measures which should be taken to minimise these.

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7 **(a)** Describe what is meant by working flexible hours.

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(b) Describe **three** benefits to the company of repair technicians working flexible hours.

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(c) Describe **two** benefits to repair technicians of working flexible hours.

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2 ....

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.... [2]

18

18

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