UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Level

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY   **9713/33**

Paper 3   **October/November 2010**

                                                           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 **18** printed pages and **2** blank pages.

UNIVERSITY *of* CAMBRIDGE
International Examinations

[Turn over

Scenario 1
Questions 1 to 3

Braemart Supermarkets are a multinational company. They use bar codes for stock control and finding prices and product information at point of sale terminals (POS) in each of their stores.

The company is concerned about the cost of stock being wasted. They are looking into a 'just-in-time' system for stocking the stores.

Their Cairo store has used computer simulations to determine the number of checkouts required to minimise customer waiting times.

The supermarket staff are trained on a regular basis regarding new procedures and new technologies.

1 **(a)** Describe how the stock file is updated using information from the bar codes.

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(b) Describe how a 'just-in-time' system would work.

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2 The number of checkouts needed in the Cairo store was determined by a computer simulation.

(a) Describe how the data is collected for use in the simulation.

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(b) What information would be required by Braemart to enable this simulation to be carried out?

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3   Braemart use computer-based systems to train their staff.

    (a) Describe how computers can be used to train staff.

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(b) Describe **four** disadvantages of computer-based training when compared to conventional "classroom" training.

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Scenario 2
Questions 4 to 6

The Asian International Insurance Company (AIIC) uses an expert system. Their insurance advisors use it to conduct risk assessments on customers.

The company is developing new products. They need to do some research to find out if a market exists for these new products.

AIIC's products are listed on a global insurance website which enables customers to choose the best insurance for their needs.

Since the head office is in a very hot country, an air conditioning system is installed which is fully computer-controlled.

9

4 **(a)** Describe how this expert system can be used.

[4]

(b) Describe the project management tools that are available to the company when developing new products to a time scale and to budget.

[4]

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5   The air conditioning system in the office is controlled by a computer system.

(a) Describe the hardware needed to allow control of the air conditioning system.

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(b) Explain how the computer and hardware interact to enable effective control of the air conditioning system in the office.

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6 (a) Describe methods used by AIIC to carry out market research on new insurance policies which would be made available online.

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(b) Discuss the advantages and disadvantages to customers of having an online facility to choose insurance policies.

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Scenario 3
Questions 7 to 8

A passport office has an intranet to enable internal communications.

They also have a website where customers can get information and also fill out forms (e.g. passport applications). The intranet links into the website. The data transferred is sometimes subject to corruption and must be checked. One method which is used by the passport office is parity checking.

The passport office has invested in the latest technology to allow reliable customer services and ensure good network security.

7 Customers can access information over the internet which involves the transfer of data to and from a central server.

(a) Describe the network protocols needed to transfer data in this situation. Your answer should include references to types of protocol, communication layers and give examples.

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(b) Describe the process of parity checking.

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8 (a) Discuss the advantages and disadvantages of common LAN topologies.

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(b) Describe possible network security risks and ways to minimise or remove these.

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(c) Describe the hardware needed to connect computers together to form LANs and WANs.

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