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Rewarding Learning

ADVANCED
General Certificate of Education
2013

Information and Communication Technology

Assessment Unit A2 1
assessing
Module 3: Information Systems

ML

[AW211]

MONDAY 3 JUNE, AFTERNOON

TIME

2 hours, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Complete in blue or black ink only. **Do not write in pencil or with a gel pen.**
Answer **all seven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 120 including a maximum of 5 for quality of written communication.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
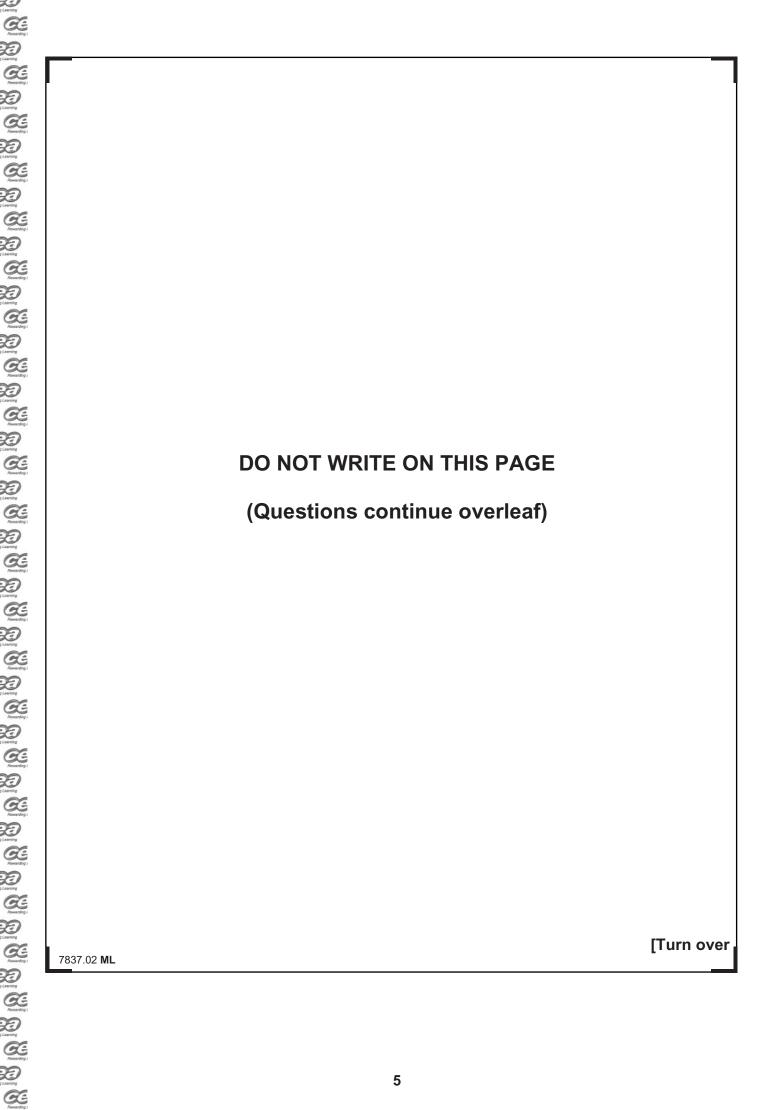
1 Most organisations have replaced standalone computers with a network.

(a) Identify **three** advantages of a network over standalone computers.

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2. _____

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3. _____

_____ [3]

(b) Explain what is meant by a **peer-to-peer network**.

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_____ [3]

(c) Communication standards are required when data is transmitted over a network.

(i) Explain the need for communication standards.

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_____ [2]

(ii) Describe the Open Systems Interconnection (OSI) model.

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(d) Explain how auditing software is used on a computer network.

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_____ [4]

(e) A network is more vulnerable to viruses than a suite of standalone computers. Explain why.

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_____ [3]

Total Question 1

DO NOT WRITE ON THIS PAGE

(Questions continue overleaf)

2 An organisation develops a new information system using RAD.

(a) Describe how the system could be developed using RAD.

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_____ [4]

(b) Name and describe one other method which could be used to develop this system.

Name _____

Description _____

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_____

_____ [4]

(c) CASE tools can be used during system development. Name and describe **three** CASE tools used during system development.

Name _____

Description _____

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Name _____

Description _____

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Name _____

Description _____

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_____ [9]

Total Question 2

[Turn over

3 Human computer interaction is an important part of system design.

(a) Describe **three** main features of a graphical user interface (GUI).

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2. _____

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3. _____

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_____ [6]

(b) Describe how psychological factors can influence human computer interaction.

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_____ [4]

Total Question 3

DO NOT WRITE ON THIS PAGE

(Questions continue overleaf)

4 Training and user support are provided for an information system.

(a) Describe **two** advantages of an electronic user guide over a printed manual.

1. _____

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2. _____

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_____ [4]

An interactive DVD can be used to provide training.

(b) Describe how data is written onto a DVD.

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(c) Explain how an interactive DVD can be used to train users of an information system.

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Total Question 4

[Turn over

5 **(a)** Organisations using ICT must comply with all relevant legislation.

(i) Describe the main features of the Copyright, Designs and Patents Act.

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(ii) Explain the main implications of Data Protection legislation for an organisation.

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_____ [4]

7837.02 **ML**

12

(b) Many organisations require their employees to sign an acceptable use policy regarding ICT.

Describe the purpose of an acceptable use policy.

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_____ [4]

(c) Describe **three** reasons why an ICT professional should become a member of the Association for Computing Machinery (ACM).

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2. _____

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3. _____

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_____ [6]

[Turn over

7837.02 **ML**

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6 A retailer uses a database system for customer orders and sales.

(a) Describe **two** drawbacks with data which is not normalised.

1. _____

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2. _____

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_____ [4]

An invoice is produced for each sale.

INVOICE

Invoice ID   **12345**   **Invoice date 02/05/13**

Customer ID **C3215**
Name   **Green**
Address   **12a Old Row**
                 Belfast

Item ID	Description	Unit price	Quantity
M8765	Motherboard	£36.99	1
H3921	External HD	£52.99	2
P6124	Power supply	£57.99	1

Invoice total: £200.96

(b) Produce an Entity Relationship Model, which does not include a many-to-many relationship, for this invoice.

[7]

(c) Normalise the data contained in the invoice below to 3NF. Show all your work.

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_____ [6]

INVOICE

Invoice ID   **12345**   **Invoice date 02/05/13**

Customer ID   **C3215**
Name   **Green**
Address   **12a Old Row**
                  Belfast

Item ID	Description	Unit price	Quantity
M8765	Motherboard	£36.99	1
H3921	External HD	£52.99	2
P6124	Power supply	£57.99	1

Invoice total: £200.96

(d) The retailer uses an expert system for planning deliveries to customers.

Name and describe **three** main components of an expert system.

Name _____

Description _____

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Name _____

Description _____

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Name _____

Description _____

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_____ [9]

Total Question 6

[Turn over

7 (a) Explain how developments in ICT have enabled employees to work from home.

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_____ [5]

(b) The publisher of a newspaper plans to make greater use of the Internet.

Write a report for the Board of Directors evaluating:

- The impact on the newspaper's circulation.
- The economic implications.

Total Question 7

Quality of written communication

[8]

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