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ADVANCED
General Certificate of Education
2014

Information and Communication Technology

Assessment Unit A2 1

assessing

Module 3: Information Systems

[AP211]

MONDAY 2 JUNE, MORNING

ML

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.
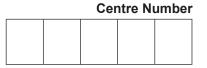Write your answers in the spaces provided in this question paper.
Complete in blue or black ink only. **Do not write in pencil or with a gel pen.**
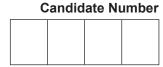Answer **all seven** questions.

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 Checksums and encryption are used when data is transmitted over a client server network.

(a) Describe the main features of a client server network.

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_____ [4]

(b) Explain what is meant by data encryption.

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(c) Explain how checksums can be used to detect errors in data transmission.

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An organisation uses a distributed database.

(d) Describe the main features of a distributed database.

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_____ [4]

(e) Write down **two** advantages of a centralised database over a distributed database.
Describe these advantages fully.

1. _____

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2. _____

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_____ [4]

DO NOT WRITE ON THIS PAGE

(Questions continue overleaf)

2 A publisher uses a relational database to produce information essential to the running of the business.

(a) Explain what is meant by

Data inconsistency _____

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Data independence _____

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Data integrity _____

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_____ [6]

(b) Three of the entities in the database are BOOK, AUTHOR and AGENT.

- Each book can have one or more authors
- An author can write multiple books
- Each agent represents a number of authors
- No author is represented by more than one agent

Draw an entity relationship (ER) diagram for these entities in the space below. Make sure that it does not contain a many-to-many relationship.

[7]

(c) Describe **three** different costs involved in producing information.

1. _____

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2. _____

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3. _____

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(Questions continue overleaf)

3 CASE tools are used during the development of a new information system.

(a) Describe **two** main features of a graphics CASE tool.

1. _____

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2. _____

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_____ [4]

(b) Explain how a project management CASE tool could be used during software development.

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_____ [4]

The new system undergoes testing and maintenance.

(c) Explain what is meant by each of the following:

Alpha testing _____

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Acceptance testing _____

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_____ [6]

(d) Explain how software maintenance can improve the quality of the new system.

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(Questions continue overleaf)

4 An organisation uses a management information system (MIS) to assist decision-making.

(a) Describe the main features of a typical MIS.

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_____ [4]

(b) Name and describe **three** levels of decision-making.

1. Name _____

Description _____

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2. Name _____

Description _____

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3. Name _____

Description _____

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_____ [6]

(c) The organisation also uses an expert system. Name and describe the three components of an expert system.

1. Name _____

Description _____

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2. Name _____

Description _____

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3. Name _____

Description _____

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_____ [6]

5 Employees can access a company's intranet.

(a) Explain the difference between an intranet and the Internet.

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(b) Explain **two** reasons why the company does not allow the use of portable storage devices.

1. _____

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2. _____

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_____ [4]

(c) Describe **three** different health problems which can arise from the use of ICT.

1. _____

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2. _____

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3. _____

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_____ [6]

(d) The company arranges membership of the British Computer Society (BCS) for its ICT staff.

Explain **two** benefits to an ICT professional of membership of the BCS.

1. _____

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2. _____

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_____ [4]

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(Questions continue overleaf)

6 A network manager uses a command line interface.

(a) Describe the main features of a command line interface.

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_____ [4]

(b) Describe the main features of a form driven interface.

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(c) An on-line training course is available for end users.

Describe how ICT can be used to provide on-line training.

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_____ [4]

7 The Internet can be used to legally watch movies by

- Downloading for watching later
- Watching in real-time

Write a report comparing these **two** methods. Make specific references to the ICT involved.

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Total Question 7

Quality of written communication

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