



Rewarding Learning

ADVANCED  
General Certificate of Education  
January 2014

Centre Number

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Candidate Number

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## Information and Communication Technology

Assessment Unit A2 1  
assessing  
Module 3: Information Systems



[AP211]

\*AP211\*

MONDAY 20 JANUARY, MORNING

### TIME

2 hours.

### 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 six** 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 A business uses a client server network.

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

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_ [3]

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [4]

Examiner Only	
Marks	Remark



The network uses wireless communication.

(c) Describe **two** benefits to the company of using wireless communication.

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[4]

(d) Describe **one** drawback to the company of using wireless communication.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[2]

Examiner Only	
Marks	Remark

[Turn over



Parity bits are used to detect errors during data transmission over the network.

(e) If **even** parity is being used, explain the errors in each of the following bytes.

**10101011**

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**10101010**

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[4]

(f) Name and describe **one** other way of detecting errors in data transmission.

Name \_\_\_\_\_

Description \_\_\_\_\_

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[4]

Examiner Only

Marks Remark

Total Question 1





The new system undergoes testing.

(c) Explain what is meant by:

Alpha testing \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Beta testing \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [4]

Technical documentation was produced during development of the new system.

(d) Identify **four** of the contents of technical documentation.

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_ [4]

Examiner Only	
Marks	Remark



(e) Describe the role of the project manager during the development of an information system.

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[4]

**Examiner Only**

**Marks Remark**

Total Question 2

**[Turn over**

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(c) Name and describe **two** psychological factors which should be considered during the design of a user interface.

Factor \_\_\_\_\_

Description \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Factor \_\_\_\_\_

Description \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [8]

Examiner Only	
Marks	Remark



**(d)** The user interface of a particular information system includes a touch screen.

Describe the main features of touch screen technology.

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[4]

**(e)** Describe the main features of an on-line course which make it suitable for training users of a new information system.

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[4]

Examiner Only	
Marks	Remark
Total Question 3	





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8999

**[Turn over**



**\*20AP21111\***

4 Legislation relating to ICT includes the Computer Misuse Act.

(a) Identify **two** offences included in the Computer Misuse Act.

1. \_\_\_\_\_  
\_\_\_\_\_  
2. \_\_\_\_\_  
\_\_\_\_\_ [2]

(b) Name and describe the purpose of **two** other laws relating to ICT.

Name \_\_\_\_\_  
Purpose \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Name \_\_\_\_\_  
Purpose \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [6]

Examiner Only	
Marks	Remark





**5** A garden centre hires out plants for special occasions.

Details are recorded in a loan table as shown below.

Loan ID	Customer ID	Customer Name	Address	Loan Date	Total Cost	Plant ID	Plant Name	Quantity
1001	102	Green	Belfast	02/05/13	£50	501	Bay Tree	10
						503	Fern	4
1002	104	White	Lisburn	03/05/13	£25	503	Fern	3
1003	103	Brown	Lisburn	03/05/13	£75	503	Fern	4
						501	Bay Tree	2
						504	Rose	4
1004	102	Green	Belfast	03/05/13	£35	504	Rose	10
						503	Fern	2

**(a)** Explain the drawbacks of using a flat file **in this case**.

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[4]

Examiner Only	
Marks	Remark



The garden centre decides to use a database management system (DBMS).

(b) Normalise the data in the loan table to 3NF showing all your work.

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[6]

Examiner Only	
Marks	Remark

[Turn over



(c) Explain the role of the Database Administrator (DBA).

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[4]

(d) End users can maintain the data in the database.

Identify **two** other facilities the DBMS will provide for end users.

1. \_\_\_\_\_

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2. \_\_\_\_\_

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[2]

Examiner Only	
Marks	Remark





(e) Customers can reserve plants in advance.

Explain why real-time processing is required **in this case**.

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[4]

(f) Visitors to the garden centre can use an expert system to select suitable plants.

Describe how garden centre staff could assist the development of the expert system.

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[4]

Examiner Only	
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Total Question 5	







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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
QWC	

<b>Total Marks</b>	
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Examiner Number

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