

New  
Specification



Rewarding Learning

ADVANCED SUBSIDIARY (AS)  
General Certificate of Education  
January 2010

Centre Number

71	
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Candidate Number

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# Information and Communication Technology

Assessment Unit AS 1  
*assessing*

Module 1: Components of ICT

[AW111]



AW111

THURSDAY 14 JANUARY, AFTERNOON

## 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.

Answer **all five** questions.

## INFORMATION FOR CANDIDATES

The total mark for this paper is 120 marks 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.

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

Total Marks	
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**BLANK PAGE**

1 In a payroll system, each employee is allocated an **EmployeeID** as shown below.

EmployeeID	EmployeeName
1435	Green
1438	Brown

(a) By referring to the above table, explain what is meant by:

Data

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[2]

Information

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[2]

(b) The EmployeeID **1435** is keyed in as **1345**.

Name and explain the type of data entry error which has occurred.

Error

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Explanation

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[2]

Examiner Only	
Marks	Remark

(c) Describe how each of the following could be used to validate an EmployeeID.

Length check

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[2]

Range check

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[2]

Lookup table

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[3]

(d) Describe how verification can be used to detect errors.

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[2]

Examiner Only	
Marks	Remark

(e) A modulus 11 check digit is calculated and placed at the end of the four-digit EmployeeID.

Show how the check digit will be calculated from EmployeeID **1435**.

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

(f) An employee complains that this week's payslip is inaccurate because the overtime hours have been added up incorrectly.

Describe **three** other ways in which the quality of information might be unsatisfactory **in this case**.

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [6]

Examiner Only	
Marks	Remark

2 OMR is used to collect answers in a multiple choice examination.

(a) Describe how data is captured using OMR.

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[4]

(b) State **two** benefits of using OMR in this case.

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

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

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[2]

Examiner Only	
Marks	Remark

(c) The examination paper includes a photograph.

The photograph was taken using a digital camera and transferred to a computer.

(i) Describe **two** ways in which the photograph could be transferred to the computer.

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

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

(ii) Name and describe **two** file formats suitable for storing a photograph.

Name \_\_\_\_\_

Description

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [3]

Name \_\_\_\_\_

Description

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [3]

Examiner Only

Marks Remark

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(d) The examination results are processed using batch processing.

Describe the main features of batch processing.

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[4]

Examiner Only	
Marks	Remark



3 A business operates from a single building which consists of an office and a number of meeting rooms. The computers in the office are networked.

(a) Explain why a LAN is suitable **in this case**.

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[2]

An additional computer is added to the network.

(b) Explain how an additional computer can be added to

A bus network

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[2]

A star network

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[2]

A ring network

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[2]

Examiner Only	
Marks	Remark

The business plans to extend the network to the meeting rooms using wireless technology.

(c) Describe the main features of WiFi.

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[4]

(d) Describe **two** benefits of a wireless network.

1. 

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2. 

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[4]

Examiner Only	
Marks	Remark

TCP/IP is used when employees access the Internet.

(e) Explain the role of each of the following when a file is downloaded.

The TCP layer

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[3]

The IP layer

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[3]

(f) Explain how a proxy server could be used when employees access the Internet.

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[4]

Examiner Only	
Marks	Remark

4 A smart card can be used to withdraw cash from an ATM.

(a) Identify **two** examples of each of the following **in this case**.

Input

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

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

Output

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

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

Processing

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

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

Storage

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

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

Feedback

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

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

Examiner Only	
Marks	Remark

Security is an important consideration when using on-line banking.

**(b)** Describe **two** of the main security risks of using on-line banking.

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

**(c)** State **four** precautions which can be taken to minimise the security risks when using the Internet from home.

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

Examiner Only	
Marks	Remark

5 A company's information system was custom built by a team of IT specialists.

The specialists carried out fact finding and produced a feasibility study.

(a) State one benefit and one drawback of each of the following methods of fact finding.

**Observation**

Benefit

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Drawback

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**Questionnaire**

Benefit

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Drawback

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**Interviews**

Benefit

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Drawback

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[6]

Examiner Only	
Marks	Remark

(b) Describe **three** factors which should be considered during a feasibility study.

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [6]

Dataflow Diagrams (DFDs) were produced during the design of the information system.

(c) Describe the purpose of a DFD.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

(d) The team which developed the system included programmers and technicians.

Explain the role of

A technician

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[4]

A programmer

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[4]

Examiner Only	
Marks	Remark



(e) Describe **two** changeover methods which could be used for a new information system.

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

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

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

Examiner Only	
Marks	Remark
Quality of Written Communication	

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**THIS IS THE END OF THE QUESTION PAPER**

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