



Rewarding Learning

ADVANCED
General Certificate of Education
2016

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

**Information and Communication
Technology**

Assessment Unit A2 1

assessing

Module 3:

Information Systems

[AP211]

MONDAY 6 JUNE, MORNING

MV18

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.

You must answer the questions in the spaces provided.

Complete in blue or black ink only.

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 at the end of each question indicate the marks awarded to each question or part question.

1 The number of users of an information system has recently increased. This has resulted in complaints about the time taken to produce reports.

(a) The system requires software maintenance.

(i) Name and describe the type of software maintenance the system requires. [3 marks]

Name _____

Description _____

(ii) Name and describe **two** other types of software maintenance. [6 marks]

Name _____

Description _____

Name _____

Description _____

(b) The information system was developed in-house using RAD.

(i) Describe the main features of RAD. [4 marks]

(ii) Describe **two** benefits of developing a system in-house. [4 marks]

1. _____

2. _____

2 A school library stores data about its books in a flat file.

The flat file is to be replaced by a relational database.

(a) Explain what is meant by each of the following.

(i) A primary key [2 marks]

(ii) A composite key [2 marks]

(iii) A foreign key [3 marks]

(b) Describe **two** advantages of a relational database over a flat file. [4 marks]

1. _____

2. _____

Student ID	Student Name	Course ID	Course Title	Book ID	Book Title	Loan Date	Return Date
S123	Green	C5	GCSE	B234	ICT Theory	01/07/15	08/07/15
				B452	ICT Projects	01/07/15	05/07/15
				B231	DBMS	02/07/15	10/07/15
S124	Brown	C5	GCSE	B231	DBMS	01/06/15	09/06/15
				B534	Maths	02/07/15	09/07/15
S125	Grey	C6	GCE	B734	DFDs for all	02/07/15	11/07/15
				B231	DBMS	05/08/15	10/08/15

3 An organisation uses a Database Management System (DBMS) and a decision support system.

(a) Explain the role of the Database Administrator (DBA).
[4 marks]

(b) Describe the main features of a decision support system. [4 marks]

The organisation uses the DBMS to process real-time transactions.

(c) Describe a suitable backup and recovery strategy for the DBMS. [4 marks]

Parity bits can be used to detect errors.

(b) Evaluate the use of parity bits in detecting data transmission errors. [4 marks]

(c) Name and describe **one** other method of detecting data transmission errors. [4 marks]

Name _____

Description _____

It is important that data on a network is kept secure.

(d) Describe **one** method of ensuring that access to data on a network is restricted. [4 marks]

(e) Describe **one** method of ensuring that data transmitted over a network is secure. [4 marks]

5 The user interface controls the way in which a human and a computer interact.

(a) Describe the main features of each of the following interfaces. [6 marks]

Natural language _____

GUI _____

(b) Name and describe **two** psychological factors which can influence how humans interact with a computer.
[6 marks]

Name _____

Description _____

Name _____

Description _____

Computer users can get support and training in various ways.

(c) Explain how users could get support from a user group.
[4 marks]

(b) Describe three benefits of using robots in this case.
[6 marks]

1. _____

2. _____

3. _____

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
QWC	

Total Marks	
--------------------	--

Examiner Number

Permission to reproduce all copyright material has been applied for.
 In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA will be happy to rectify any omissions of acknowledgement in future if notified.