



Rewarding Learning

**ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2016**

Information and Communication Technology

Assessment Unit AS 1

assessing

Module 1: Components of ICT

[AP111]

TUESDAY 14 JUNE, AFTERNOON

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

		AVAILABLE MARKS
1	<p>(a) <u>A direct data source</u> Designed for a specific purpose To find out shopping preferences <u>An indirect data source</u> Used for a purpose other than what was originally intended Example: To send mail shots/sell to a third party</p>	[4]
	<p>(b) (i) <u>Data</u> Raw facts and figures [1] <u>Information</u> Data with a context or meaning [1]</p>	[2]
	<p>(ii) <u>Knowledge</u> Applied ... information 2 × [1]</p>	[2]
	<p>(c) <u>Range check</u> Value between an upper ... and lower limit <u>Format check</u> Value matches a pre-defined ... pattern/picture <u>Lookup table</u> Value checked by computer ... in an electronic table</p>	[6]
	<p>(d) (i) Each digit is multiplied by a weighting ... based on its position The products are totalled The total is divided by 11 and the remainder obtained The check digit is 11 – remainder 4 × [1]</p>	[4]
	<p>(ii) If two digits are interchanged The weightings will change 2 × [1]</p>	[2]
		20

		AVAILABLE MARKS
2	<p>(a) An image of the document is created Light and dark areas are detected These are compared to a database ... and converted into editable text ... objects such as tables can be detected 4 × [1]</p>	[4]
	<p>(b) Greater data input accuracy ... as no transcription is required 2 × [1]</p> <p>Data can be input electronically ... without human intervention 2 × [1]</p>	[4]
	<p>(c) Input documents are collected over a period of time ... until a suitable quantity is available or a specific time is reached All documents undergo the same processing ... at off-peak periods</p>	[4]
	<p>(d) Manages the order instructions are executed Implements loops and jumps Manages the fetch/execute cycle</p>	[3]
	<p>(e) ROM Stores the bootstrap or BIOS ... so that it is available on switch on RAM Stores the current program ... and the data being processed/before it is saved Cache Stores most recently/frequently accessed data ... so that they can be accessed faster</p>	[9]
		24
3	<p>(a) Search bar used ... for entering criteria Matches displayed in order of relevance Searches can be refined using AND/OR/NOT</p>	[4]
	<p>(b) Navigation controls – buttons, tabs, home page, hyperlinks History/bookmarks/favourites Address bar used to enter Internet address/URL Search engine</p>	[4]
	<p>(c) Usually developed collaboratively Source code in the public domain License terms allow users to change the code ... and distribute the software to others ... modified or unmodified [1] for each of four points</p>	[4]
		12

			AVAILABLE MARKS
4	<p>(a) <u>A bus network</u> Computer connected to shared bus ...via its own connector</p> <p><u>A ring network</u> Link between two nodes broken New computer connected between them</p>	[4]	
	<p>(b) <u>Gateway</u> Joins two networks together/LAN to a WAN ... which use different protocols It converts data into the appropriate format</p> <p><u>Firewall</u> Checks data entering or leaving a network ... against security settings ... and blocks it or allows it to enter</p>	[6]	
	<p>(c) <u>TCP</u> Defines how computers send packets of data to one another Defines how data is split up into packets Reassembles data packets/handles errors</p> <p><u>IP</u> Delivers data packets to the appropriate node ... using the IP address Treats each data packet independently/packets may take different routes</p>	[6]	16
5	<p>(a) Increased productivity ... as robots can work for longer periods than humans [1] + [1]</p> <p>Improved quality ... robots are programmed to work consistently [1] + [1]</p>	[4]	
	<p>(b) Products are tagged Radio frequencies used Tags hold data about the product Passive/active technologies</p>	[4]	
	<p>(c) Close contact between tag and reader not required ... so parts can be tracked as they move [1] + [1]</p> <p>Tags are more durable as they can be inserted inside the aircraft part ... bar codes can get torn or dirty [1] + [1]</p>	[4]	12

		AVAILABLE MARKS
6	<p>(a) <u>Logic bomb</u> Lies dormant ... until a specific piece of program code is activated ... or a specific date reached <u>Macro virus</u> Written in a programming language/code/script ... and attaches itself to a document/spreadsheet/application A short program can be embedded in a document/file [6]</p> <p>(b) It will identify the main risks to the organisation from possible disasters key data/key personnel/key roles Alternative location may be identified where the organisation can continue to operate [3]</p>	9
7	<p>(a) <u>Technical feasibility</u> Will the required hardware ... software be available 2 × [1] <u>Legal feasibility</u> Will the system comply with all relevant legislation ... such as the DPA or the CDPA 2 × [1] <u>Social feasibility</u> The impact on employees/training/jobs The impact on clients/customers 2 × [1] [6]</p> <p>(b) Data source/destination or external entity Process Data store Data flow 4 × [1] [4]</p> <p>(c) <u>Project manager</u> To schedule the project and manage the budget To allocate resources To monitor progress and respond to risk <u>Programmer</u> Write program code ... from module specifications Perform application testing/test and debug code [6]</p> <p>(d) <u>Application testing</u> Performed in-house Tests system specification uses system, module or intergration testing Uses test data/plan <u>Acceptance testing</u> Performed by end user ... in real environment Leads to sign off [6]</p>	22
Quality of written communication		5
Total		120