GCE 2005
January Series

AQA
ASSESSMENT and QUALIFICATIONS ALLIANCE

Mark Scheme

Information and Communication Technology
ICT 2

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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GENERAL GUIDANCE NOTES FOR EXAMINERS

Overall guidelines

1. All examples accepted should be clearly related to the subject area and should not be "generalised" examples.

2. Attention should be paid to ensure that marks are not awarded for simple restating of the question or the stem, often involving the exact same terms.

3. The answers should be providing evidence of more than "man in the streets" knowledge of ICT.

4. It should be remembered that scripts could be seen after they are marked and so consistency of approach and correct mechanics of marking are essential.

5. Rules on positioning of ticks and marks are to aid in checking and remarking of scripts.

6. Do not expect the candidate to use the exact wording given in the mark scheme. If you are in doubt as to the correctness of an answer given by the candidate, consult your Team Leader.

7. The answers given in the mark scheme are exemplars. Credit must be given for other correct answers not given in the mark scheme. Please refer to Team Leaders where there is any doubt.

8. One-word answers, where acceptable, will be indicated on the question paper.

9. The meaning of ICT-specific words and phrases are as defined by *A Glossary of Computing Terms* (current edition) by the British Computer Society.

Specific marking guidelines

10. The basic rule is one mark one tick. The tick to be positioned at the point where the mark is gained in the answer and definitely not in the margin.

11. The only figures in the margin should be sub-totals for parts of questions and a final ringed total for a whole question.

12. Where questions are divided into parts a, b and so on, and a mark is indicated for each on the paper, a mark should be positioned at the end of the appropriate response in the margin.

13. There should in effect be a mark in the margin at every point there is one on the question paper and a number of ringed totals, which relates directly to the number of questions on the paper.

14. Where a question has only one part, the total for that question should be written once and then again and circled. This allows for easy checking that totalling and transcription of marks is correct.

15. All zero values should be crossed through.

16. All blank spaces should be crossed through with a vertical line through the text space – not in the margin.

17. All writing must be marked as read, either by the presence of ticks or by striking through the script with a vertical line.

18. All blank pages must be crossed through.

19. Where candidates have added extra to their answers later in the script, the total mark should be indicated as including x from Page y. The total mark should be in the position where the answer starts.

20. The use of the following symbols/marks is acceptable:

a. BOD – where the benefit of the doubt is given for the point the candidate is making. This is generally where poor writing or English is an issue. Its widespread use should be avoided.

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b. Underlining of subject specific terminology, which is misused or incorrect e.g. encoding rather than encryption, information rather than data.

c. Underlining can also be used to highlight clearly incorrect statements or the use of a generalised phrase such as quicker, user friendly and so on.

d. An omission sign ^ should be used where the candidate has given insufficient information to gain a mark. This is particularly useful when a teacher or student looks at scripts against a mark scheme.

e. It may be appropriate to indicate where the same point has been covered more than once by an arrow or where a point has been covered in several lines of prose by the use of brackets.

f. The use of letters associated with ticks **may** be used to indicate different areas being marked in a question, particularly to indicate the different bullet points in an essay. THIS WILL BE OUTLINED AT STANDARDISATION.

21. **NO** other symbols or comments should be used.

22. Markers are responsible for checking

a. The transposition of marks to the front sheet

b. That all work has been marked on each script

c. That all marks for individual questions are totalled correctly

d. That the script total is transferred to the box at the top right of the script.

e. That they **clearly** initial the script, under the total at the top right, so it is possible for the Principal Examiner to identify each markers work.

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Unit 2 Information: Management and Manipulation

Examiners: the answers given in this mark scheme are exemplars. Credit must be given for other correct answers not given in the mark scheme. Please refer to Team Leaders where there is any doubt.

1	*State **two** types of data, other than text, that can be stored in a computer file.*	
	Topic 11.5 – Manipulation and/or processing NB QUESTION IS **STATE** • Sound/Audio/Music • Picture/graphics/images/e.g. bitmap, vector • Video • Date/Time • ALLOW Program • Boolean/Logical e.g. Y/N • Numbers – used for arithmetic/currency e.g. binary, real etc **Max 2** **NB NOT Alphanumeric or Alpha – same as text** **NOT file extensions**	2 marks

2	*Describe **two** possible differences between a Local Area Network (LAN) and a Wide Area Network (WAN).*	
	Topic 11.9 Network environments NB QUESTION IS **DESCRIBE** • Difference in reach (1) LAN restricted to a single site/building/campus (1) WAN more than one site/geographically remote locations (1) • Difference in type of connection (1) LAN can be connected via direct link/physical link/co-axial cable/UTP/fibre optic cable/wireless (1) WAN connection via satellite link, modem, telephone line (1) • Difference in speed of transmission of data (1) LAN high speed (10Mb, 100Mb etc) (1) WAN generally slower (1Mb typical broadband) (1) **Max 4 (2,2 or 3,1)**	4 marks

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3	*Give **four** advantages of using a relational database over a flat file information storage and retrieval system.*	
	Topic 11.3 – Organisation of Data for effective retrieval • Independence of data • Changes in data structure do not require changes to applications that access the data • Less (allow no) redundant data/less duplicated data • Consistency of data • Improved quality of management information • "Single input" principle/updating less time consuming • Increased productivity …. • …as ad hoc reports can be generated to meet particular needs • relationships between tables allow ….. • ……extraction of linked information • Allows different access rights for <u>different parts of database</u> **Max 4** **NOT queries, forms, reports part of DBMS** **NOT takes up less space**	4 marks

4	*All employees of a company have to use an eight-character password to access the company's computer network.* *State **three** rules that the employees should follow to ensure the password system is an effective security measure.*	
	Topic 11.8 – Security of data • Employees should not deliberately disclose passwords • Employees should not carelessly reveal passwords • Passwords should be changed regularly • Rule about the choice of password e.g. Passwords should not contain memorable personal data/ information that is known/could be guessed by others, passwords should contain both letters and numbers, etc • Employees should not leave the company network so that the password system can be circumvented e.g. leave the computer logged on **Max 3**	3 marks

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5	*An applications package has macro capabilities.* *(a) Describe what is meant by the term macro.* *(b) Give **two** examples of where the use of macros would be appropriate.*	
	Topic 11.4 Capabilities of Software (a) • A sequence of instructions • which are defined as a single element….. • ….that performs a task required on a regular basis • Provides ability to store/record/define a sequence of instructions • Actuated by a single instruction/key sequence/hot key/button/icon selection **Max 2** (b) **any 2 examples** of a sequence of commands that is likely to be required frequently or a sequence of commands to automate a task or a sequence of commands to provide a customised user environment **2** **Allow c/f or c/b of marks**	2 marks 2 marks

6	*Explain the difference between the terms* verification *and* validation *when applied to the input of data. Illustrate your answer with an example of each.*	
	Topic 11.2 – Verification and validation ***Verification*** • Checking by comparison that no alterations (allow mistakes) are made to data on entry into the computer system • Specific example e.g. keying data twice and comparing on input, checking contents of completed input screen with input document ***Validation*** • Checking that data is sensible (allow suitable alternative word)/rejecting data that is unreasonable • Specific example e.g. Presence check, Format check etc **Max 4** **ALLOW JUST NAME OF CHECK OR EXAMPLE** **Do Not allow CORRECT by itself for either of the above**	4 marks

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7	*A small company is reviewing its backup procedures.* *Describe **four** items that need to be considered when reviewing the backup procedures.*	
	Topic 11.8 – Security of data • Backup medium (1) expansion with examples or description (1) • Location of backup (1) expansion with examples or description (1) • Type of backup (1) expansion with examples or description (1) • Timing of backup (1) expansion with examples or description (1) • Frequency of backup (1) expansion with examples or description (1) • Security of backup (1) expansion with examples or description (1) • Organisation of backups (1) expansion with examples or description (1) • Responsibility for backup (1) expansion with examples or description (1) • Testing of backup (1) expansion with examples or description (1) • Procedures for recovery (1) expansion with examples or description (1) **Any 6 x (2, 1, 0)** **Max 8**	8 marks

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8	*(a) Explain what is meant by the term* generic package software. *(b) Give **three** different examples of generic package software.*	
	Topic 11.4 – Software; nature capabilities and limitations (a) • An applications package • That is appropriate to many areas • Of day to day business operations **Allow c/f mark if example mentioned here** **3** (b) • Word-processor • DTP • Spreadsheet • Database management software • Integrated package • Presentation Software • Graphics Software • Browser/Web creation software **Max 3**	3 marks 3 marks

9	*A village store has just installed an Electronic Point-Of-Sale (EPOS) System including a bar code reader.* *(a) Describe **two** advantages that the store gains from using the EPOS system.* *(b) Describe **one** disadvantage to the store of the EPOS system.*	
	Topic 11.1 Data Capture Topic 11.7 – Hardware; nature capabilities and limitations (a) • Automatic input (1) avoids errors e.g. audible signal if bar code misread, check digit to ensure bar code read correctly (1) • Greater productivity (1) Saves time spent in looking up (**NOT keying in**) prices (1) • Ease of pricing/changing prices (1) without pricing/re-pricing stock items (1) • Ability to link to another system (1) e.g. stock control, electronic reordering (1) • Stock reports /Management Information (1) e.g. to help prevent out of stock items, over stocking etc (1) **Any 2 x (2, 1, 0)** (b) • problems if system 'goes down' (1) need alternative method e.g.….(1) • item does not have bar code or bar code is not readable (1) need to be entered by key pad etc (1) • keeping system up to date (1) e.g. entering new products (1) • cost or time taken for training (1) e.g. double staffing at till etc **Any 1 x (2, 1, 0) 2**	4 marks 2 marks

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10	*Most PCs make use of a GUI (graphical user interface). State **four** features of a GUI, giving an advantage of each feature.*	
	Topic 11.10 – Human/Computer Interface DESCRIBE • Windows/dialogue boxes (1) plus advantage (1) • Icons(1) plus advantage (1) • Menus(1) plus advantage (1) • Pointers/mice(1) plus advantage (1) • Help (1) plus advantage (1) • Drag and drop (1) plus advantage (1) • Popups…..(1) plus advantage (1) • Toolbars (1) plus advantage (1) NOT WIMP by itself **Any 4 x (2, 1, 0)**	8 marks

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11	*The head of a company's IT services department is to give the company's computer users a presentation about the facilities offered by operating systems.* *(a) State **four** facilities offered by operating systems that should be included in the presentation.* *(b) He decides to develop a computer-based presentation to be displayed using an LCD (data) projector rather than creating overhead projection transparencies.* *(i) State **three** functions of the presentation software that are available for use with the LCD (data) projector (but cannot be used with overhead projection transparencies).* *(ii) Give **four** factors that should be considered when designing an effective presentation.*	
	Topic 11.4 – Software: Nature, Capabilities and Limitations Topic 11.6 – Dissemination/Distribution (a) • Manages (loads, runs, terminates) all the other programs in a computer • Manages user communication with the computer • Hides the complexity of the hardware from the user • Handles input/output from attached hardware devices/peripheral control NB includes external communications • Management of security • Resource allocation and scheduling • Memory management • Backing Store management • Management of multitasking/transfer of data between programs • Interrupt handling • Power Management • **Re**boot • Provision of user interface • Install/uninstall software • Provision of error messages/error logging **Max 4** (b)(i) • Automation of presentation/automatic slide changing • Availability of transitions between slides • Use of video • Animation • Sound • Ability to change or update information instantly • Importing of <u>live</u> information from other packages • Pack and go/creation of stand-alone presentations **Max 3** (b) (ii) • appropriate to venue • content appropriate to intended audience • style of presentation use of appropriate	4 marks 3 marks

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	Images/Animation/Sound/colour etc/poor quality items will distract audience • Application of Company Standards • Adoption of clear layout principles • Avoidance of information overload/ length of presentation/too much on one slide **Any 4 x 1**	4 marks

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