AQA

ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Education

Information and Communication Technology 5521

Unit 2   Information: Management and Manipulation

Mark Scheme

2008 examination - January series

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.

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 street" 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. Where a mark is only available if there is a previous correct response, i.e. a dependent mark, then this will be indicated on the mark scheme.

10. 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

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

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

13. Where questions are divided into parts a, b, c 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.

14. 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.

15. 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.

16. All zero values should be crossed through.

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

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

19. All blank pages must be crossed through.

20. Where candidates have added 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.

21. The use of the following symbols/signs 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.

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.

22. NO other symbols or comments should be used.

23. 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.

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	*Topic 11.5 – Manipulation and/or processing* *State **three** types of data that can be stored in a computer file.*	*(3 marks)*
	NB QUESTION IS **STATE** • Text • Sound/Audio/Music • Picture/graphics/photograph/images/e.g. bitmap, vector • Animated graphics/Video • Date/Time • ALLOW Program • Boolean/Logical e.g. Y/N • Numbers – used for arithmetic/currency e.g. binary, real etc **Max 3** **Not file extensions**	

2	*Topic 11.7 – Hardware* *State, with reasons, **two** items of hardware that could be needed for a personal computer to connect to the Internet.*	*(4 marks)*
	• Router (1) to provide a connection between the PC and phone line/LAN (1) • Modem (1) to allow the computer to send/receive data over phone lines (1) • Network Interface Card (1) to connect to a LAN that provides internet access (1) • Wireless adaptor/card (1) connect to Wireless Access Point / Wireless Router (1) • ALLOW Telephone line/cable (1) for transmission of data/to provide <u>physical</u> connection to ….NOT INTERNET (1) 　**Max 4**　　**2 x (2,1,0)**	

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.

3	*Topic 11.1 – Data Capture*
	
	State a suitable use for each of the following methods of data capture. Your uses must be different in each case.
	
	    (a) Optical Character Recognition;
	    (b) Optical Mark Recognition;
	    (c) Magnetic Ink Character Recognition;
	    (d) Barcode reading.
		
		(1 mark)
		(1 mark)
		(1 mark)
		(1 mark)

	(a) conversion of text in an existing document to editable electronic copy (b) Answers to multiple choice tests/lottery choices etc (c) Processing <u>cheques</u> (d) Purchase goods/library loans etc **4** **Examiners – just tick each correct answer and total, then copy to ringed total**	

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.

4	*Topic 11.4 – Software: Nature, Capabilities and Limitations*	
	An applications package has macro capabilities.	
	(a) *Explain what is meant by the term macro.*	*(3 marks)*
	(b) *Give **two** examples of where the use of macros would be appropriate.*	*(2 marks)*
	(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/event **Max 3** (b) any two examples of a sequence of commands that are likely to be required frequently to automate a task or to provide a customised user environment. e.g. Print a selected area of a worksheet, load a skeleton letter etc **Max 2**	

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.

5	**Topic 11.2 - Verification and Validation** **Topic 11.3 – Organisation of Data for effective retrieval** *A company stores its staff details in a computer file. Examples of records from the file are shown below.*	

Surname	*Forename*	*Department Code*	*Department Name*	*Extension Number*
Chan	*Clive*	*A1*	*Accounts*	*572*
	Wendy	*T1*	*Training*	*467*
Smith	*Sarah*	*T1*	*Training*	*468*
Chan	*Clive*	*A1*	*Accounts*	*572*
Patel	*Paul*	*A1*	*Acounts*	*573*
Jones	*Janet*	*T1*	*Accounts*	*574*

(a) *The records in this file have been input with validation checking turned off.* **Referring to the records above**, *state* **four** *problems that have occurred.*   *(4 marks)*

(b) *Name and describe* **three** *different validation checks that would have prevented* **these problems**.   *(6 marks)*

(c) *The staff details are to be stored in a relational database.* *Give* **three** *advantages to the company that this would bring.*   *(3 marks)*

(a)
- No entry in Surname field for second record   *(I)*
- Janet Jones record department code and department name don't match   *(II)*
- Clive Chan has two identical records   *(III)*
- Accounts spelt incorrectly   *(IV)*

4

(b)
- Presence check (1) and description of check (1)   *(I)*
- Cross field check (1) and description of check (1)   *(II) (IV)*
- Uniqueness check (1) and description of check (1)   *(III)*
- Look-up list (1) and description of check (1)   *(II) (IV)*

3 x (2,1,0)   6

Need to mention problem in (a)

(c)
- Independence of data…..
- Less (allow no) redundant data/less duplicated data…
- …. leading to a reduction in file size(for larger files)
- "Single input" principle/updating less time consuming
- Consistency of data
- Improved quality of management information
- Increased productivity…..
- extraction of linked information
- Use of DBMS functions e.g. queries, forms, reports, different views, different access rights etc

Max 3

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.

6	*Topic 11.4 – Software; nature capabilities and limitations* *(a) Explain what is meant by the term generic package software.* *(b) Give **three** different examples of generic package software.*	*(3 marks)* *(3 marks)*
	(a) • General purpose software • An applications package or description • that is appropriate to many areas • of day to day business operations **ALLOW** example ***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*	

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.

7	*Topic 11.10 – Human/Computer Interface* *Most personal computers make use of a Graphical User Interface (GUI).* *State **four** features of a GUI, giving an advantage of each feature.*	*(8 marks)*
	• 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)**	

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.

8	*Topic 11.8 – Security of data Topic and 11.6 – Dissemination/ Distribution*	
	Students at a school are responsible for backing up their own work. You have been asked to give a short talk, to a group of new A level ICT students, about backing up project work. Your talk must include reasons why project work should be backed up and what needs to be considered when taking backups.	
	*(a) State, with a different reason for each one, **five** key points about backing up project work that you will include in your talk.*	*(10 marks)*
	(b) You have decided to develop a computer-based presentation to be displayed using an LCD (data) projector.	
	*(i) State **three** functions of the presentation software that are available for use with the LCD (data) projector, but which cannot be used with overhead projection transparencies.*	*(3 marks)*
	*(ii) Give **four** factors that should be considered when designing an effective presentation.*	*(4 marks)*

(a)
- WHY - having a copy (1) to use if original work is lost or corrupted(1)
- MEDIUM - on an appropriate medium (1) example of suitable medium(NB NOT CD/CD-ROM or Magnetic Tape; hard drive must be additional one) NB could be on an Internet site/sent as email attachment (1) of a suitable capacity (1)
- FREQUENCY - copying on a regular basis (1) e.g. every week/ every time project is worked on (1) so that an up to date version of the backup is always available (1)
- ORGANISATION - good organisation/naming of backups (1) so that the most recent copy can be easily found (1)
- TYPE – type of backup e.g. incremental, full etc (1) description in context (1) advantage (1)
- SECURITY/LOCATION - keeping the copy in a known safe place (1) so <u>copy</u> not lost or corrupted (1)
- RECOVERY - test to see that the backup copy works (1) both at school and home (1) so that recovery is possible (1)

Max 10 5 x (3, 2, 1, 0)
Allow answers giving examples appropriate to student work

(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
- Interaction with presentation

Max 3

(b) (ii)
- appropriate to venue
- content appropriate to intended audience
- style of presentation use of appropriate Images/Animation/Sound/colour etc
- poor quality items will distract audience
- Application of School Standards
- Adoption of clear layout principles
- Avoidance of information overload/ length of presentation/too much on one slide

Any 4 x 1