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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Marks
1	**Three** from: • A program that helps perform maintenance (in a computer system) (1) • A program that performs a specific task ... (1) ... usually related to managing system resources (1) • Operating systems can contain a number of different utilities/types (for managing files and storage devices) (1) • Identified suitable example (e.g. file management/storage device) (1) **One** from: • Generic statement of why utility software is required (1) e.g. • It is needed to keep the computer free from viruses (1) • It is needed to make the files contiguous (1) • It is needed to improve the computer's performance by managing the allocation of computer memory (1)	4

Question	Answer	Marks
2	**Four from:** • Follow anti-malware policies. (1) • Report malicious websites **to the e.g. network manager**/**compliance**(1) • Maintain up to date knowledge of risks (from malware) (1) • Be suspicious about clicking on links (1) • Know that they must not connect removable media/memory sticks//personally owned device to their computer//the network (1) • Report strange/unexpected system behaviour **to the e.g.network manager/compliance** (1) • Only download software from **a trusted** source//do not download software onto the computer (1) • Disconnect computer from network when not making use of network facilities (1)	4

Question	Answer	Marks
3	**Up to six marks available for three matched pairs** **e.g.** • **Delete/remove** a (master file) record (1) • To remove duplicates//Where a record is no longer needed (accept examples) (1) • **Amend**/**change** a (master file) record (1) • E.g. A worker moves department/gets a pay rise/changes name (1) • **Add/append** a (master file) record (1) • A new worker joins the company (1)	**6**

Question	Answer	Marks

4	**Six** from:
	
	• Chip is read/checked ... (1)
	  ... to make sure it has not been reported stolen, is in date and is a valid card number (MUST be two of three) ... (1)
	  ... If not message appears saying the card is invalid (and the transaction does not continue) (MAY BE AWARDED WHERE ONLY ONE OF PREVIOUS THREE EXAMPLES HAS BEEN GIVEN) (1)
	• PIN entered by the customer **is compared** with that **stored on the chip** (1)
	• If PIN is verified the transaction continues ... (1)
	  ... otherwise (error) message will appear ... (1)
	  ... customer is asked to re-enter PIN (1)
	• If after three attempts the PINs do not match the transaction is rejected (1)
	• Supermarket computer contacts customer bank (to find customer's records) to see if there are sufficient funds **in the customer's account** (1)
	• If there are **sufficient funds in the customer's account** transaction is completed (1)
	• If there are **insufficient funds in the customer's account** transaction is rejected (1)
	• Amount of the transaction is deducted **from customer's bank account** (1)
	• Amount of the transaction is credited **to supermarket's bank account** (1)
		6

Question	Answer	Marks
5	**Five** from: • Often called public-key encryption (1) • Uses two **different** keys// one <u>public</u> and one <u>private</u>/<u>secret</u> (key) (1) • No need to transfer a key (with the message) (1) • The **public** key/key held by **the person doing the encryption** is used to encrypt the data (1) • The corresponding **private/secret** key is used to decrypt the data (1) • The **public** key is published to everyone (1) • The **private** key is kept secret (1) • **Anyone** with a copy of the **public key** can encrypt information (1) • **Only** the **private key** holder can read the information (1) • It is not possible to deduce the private key from the public key (1)	5

Question	Answer	Marks
6	**Five** from: e.g. • Younger people could train older people (1) • The government could subsidise internet access for older people (1) • Government could encourage libraries/community centres to offer free internet access **to older people/those who do not have access** (1) • Retirement villages could be built incorporating technologies (1) • Information providers should be required to produce content in suitable formats so that people with weaker eyesight can easily access the content (1) • Grants can be made to organisations to deliver digital literacy training programmes to older people (1) • Schools could allow older people access to technology facilities in the evenings//during school holidays (1) • Schools could provide teaching and training to older people to improve their skills (1)	5

Question	Answer	Marks

7	**Eight** from:
	
	• Spreadsheet models can do complex calculations (1)
	• Formulas are recalculated automatically ... (1)
	  ... speeding up the use of the model (1)
	• Graphs that are produced to show population growth ... (1)
	  ... will (automatically) change as new values **are added**/old values **altered** (1)
	• (Reliable because) provide consistent results from the same inputs //will always produce the same answer (1)
	• Spreadsheets can **automatically** download data to provide data in the fields (1)
	• Cannot account for every possible variable when forecasting population growth ... (1)
	  ... therefore model can give misleading results (1)
	• To try to account for as many variables as possible requires complex formulae ... (1)
	  ... which may need experts who are expensive to hire (1)
	• Producing an **effective** model may be time consuming (1)
	• The model can have formulae replicated (1)
	• Complex population predictions may need additional software/modules ... (1)
	  ... which is expensive **to buy** (1)
	• Data can be entered accurately because of computer-based validation and verification (1)
	
	Max. six marks if bullets/list of points
	Max six if no expansions
		8

Question	Answer	Marks

8	**Six** from:
	
	• Proprietary software is owned by the copyright holder//not owned by the user (1)
	• Proprietary software users have to purchase a licence/pay to use it ... (1)
	  ... open source software is usually free to download// includes a request for a donation to charity (1)
	• There are **almost always** restrictions on the use of proprietary software ... (1)
	  ... open-source software can be used/accessed/implemented by anyone (1)
	• The specific terms of use are included in an end-user license agreement (1)
	• The source code of proprietary software is a secret ... (1)
	  ... open-source software source code is open to inspection (1)
	• Usually covered by copyright which provides a legal basis for its owner to establish exclusive rights ... (1)
	  ... open-source software code can sometimes be amended without breach of copyright legislation (1)
		6

Question	Answer	Marks
9(a)	One from: • Electrical resistance **is changed**/voltage **is generated** (depending on the temperature) (1) • **Electrical signals** are generated (which are converted into values (to represent temperature)) (1).	1

9(b)	```WHILE system switched on```
	``` INPUT temperature```
	``` IF temperature > preset```
	``` THEN```
	``` IF window closed```
	``` THEN```
	``` send signal to motor to open window```
	``` ENDIF```
	``` ELSE```
	``` IF window open```
	``` THEN```
	``` send signal to motor to close window```
	``` ENDIF```
	``` ENDIF```
	```ENDWHILE```
	
	• send signal to open//open window (NOT 'output') (1)
	• send signal to open//open window as 1st statement (1)
	• ENDIF closes the IF statement (1)
	• ALL three ENDIFs in same vertical plane as relevant IFs (within reason) (1)
	• ELSE (1)
	• ELSE in same vertical plane as THEN (1)
	• 'IF window open' (or equivalent) ... (1)
	  ... IF window open condition closed with ENDIF (1)
	• Close window instruction (1)
	• Send signal to motor to close window appropriately positioned (1)
	• IF temperature > preset value condition closed with ENDIF (1)
	• Whole of IF Window open section indented correctly (allow follow through on close window instruction position) (1)
	• ENDWHILE as final statement (1)
		8

Question	Answer	Marks

9(c)	**Eight** from:
	
	Advantages max 6
	
	• Reduced chance of plants dying/wilting etc (1)
	• Jose could forget to (e.g.) open window//be so busy that he is unable to (e.g.) open window ... (1)
	    ... computers can be permanently switched on and take action regularly/will not forget (1)
	• Jose can do other tasks (1)
	• Computers can take action immediately if the temperature gets too hot ... (1)
	    ... there would be a delay before Jose can take action (1)
	• Readings taken by computers tend to be more accurate ... (1)
	    ... and action taken is therefore more likely to be the correct one (1)
	    (ACCEPT CONVERSE ARGUMENTS ABOUT JOSE'S INACCURACY)
	• If Jose was physically disabled, he may find it difficult to open window ... (1)
	    ... whereas computer can do it automatically (1)
	
	Disadvantages max 6
	
	• Computers can be expensive **to buy** ... (1)
	    ... whereas it would not cost Jose any money to look after the plants himself (1)
	• Computer maintenance costs can be expensive ... (1)
	    ... whereas with Jose that is not a problem (1)
	• It is quite difficult to program computers to take correct action ... (1)
	    ... but Jose would know instinctively//will have expertise (1)
	• Sensors can deteriorate//become inaccurate ... (1)
	    ... whereas Jose's actions will tend to be more consistent (1)
	    ... and will need recalibration (1)
	• A computer-controlled system will not be able to function if there is a problem with the computer/there is a power cut/load shedding (1)
	
	Max. six marks if bullets/list of points
	Must have at least expansions or comparisons to achieve six marks in either section
		8

Question	Answer	Marks
10	**Five** from: • Follow data protection act rules (1) • Use only the minimum necessary confidential personal information (1) • Use anonymised information wherever possible (1) • Securely dispose of confidential personal **information when it is no longer needed** (1) • Only share/disclose/publish confidential personal information where it is lawful to do so (1) • Only allow **authorised** workers to view the data (1) • Encrypt the data (1) • Ensure workers have a duty of confidence/sign a confidentiality agreement (1) • Use aggregated data wherever possible (1) • Remove geotags from photos/images (1)	**5**

Question	Answer	Marks
11	**Max TWO** from: **e.g.** • Data has been collected for a particular/different purpose ... (1) ... but then that data is used for something else (1) **Max TWO** from: e.g. • The Electoral Register is a list of adults who are entitled to vote in a local or national election (1) • Customers in stores often provide personal information when they buy products (1)	**4**