



**2012 Computing Studies**

**Standard Grade – Credit**

**Finalised Marking Instructions**

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## Part One: General Marking Principles for Computing Studies Standard Grade – Credit

*This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this Paper. These principles must be read in conjunction with the specific Marking Instructions for each question.*

- (a) Marks for each candidate response must always be assigned in line with these general marking principles and the specific Marking Instructions for the relevant question.
- (b) Marking should always be positive i.e., marks should be awarded for what is correct and not deducted for errors or omissions.
- (c) If a question is worth two or more marks, it would be helpful if you could indicate with a tick (✓) where you have allocated the marks. For example, if a candidate is awarded two marks out of three, in question 4(c), then indicate where you have awarded the two marks.
- (d) If a specific candidate response does not seem to be covered by either the principles or detailed Marking Instructions, and you are uncertain how to assess it, you must seek guidance from your Team Leader/Principal Assessor. You can also email or phone the e-marker Helpline.
- (e) Award **one** mark for each 'bullet' point where stated in the marking instructions.
- (f) On the MFI system, if a candidate has not answered or attempted a question a NR must be placed in the mark column instead of a zero '0'.
- (g) When converting from Gigabytes/Megabytes/Kilobytes to bytes, '1024' is the only unit acceptable, e.g. 1024 bytes = 1 Kilobyte, 1024 Kilobytes = 1 Megabyte, 1024 Megabytes = 1 Gigabyte.
- (h) No piece of work should be ignored without careful checking. Candidates may have scored out an answer then written the correct answer at the back of the question paper. Make sure that every page is checked.
- (i) If the first answer has been scored out, but still readable, *and not replaced by another answer*, the question should be marked in the normal way. If you feel that a candidate has been disadvantaged by this action, contact your Team Leader.
- (j) On the MFI system, if you come across a paper which is blank, scroll down to the end of the paper in-case the answers have been written on a separate piece of paper which will be scanned and added to the end of the on-screen paper.
- (k) Any references to trade names or commercial products, e.g. "Microsoft", "MSN", etc. should be ignored, and then the rest of the answer should be marked. For example, if you received an answer "Microsoft Spreadsheet" then "Microsoft" would be ignored and "Spreadsheet" accepted, but "Microsoft Excel" would be ignored.

## Part Two: Marking Instructions for each Question

| Question |   |     | Expected Answer/s   | Max Mark      | Additional Guidance |
|----------|---|-----|---|---------------|---------------------|
| 1        | a |     | Network Manager – allocating user-ids and passwords <b>or</b> setting user’s access rights <b>or</b> allocating storage space<br>Engineer – maintain hardware <b>or</b> fix problems with computers   | 2<br><br>(PS) | No other answers    |
| 1        | b |     | Any <b>two</b> from: <ul style="list-style-type: none"> <li>contains (micro)chip / processor</li> <li>difficult to forge</li> <li>can easily be updated</li> </ul>  | 2<br><br>(PS) | No other answers    |
| 1        | c | i   | Making sure that data has been <b>entered</b> correctly <b>or</b> is correct <b>or</b> is accurate  | 1<br><br>(KU) | No other answers    |
| 1        | c | ii  | Real time   | 1<br><br>(PS) | No other answers    |
| 1        | c | iii | (Usernames and) Passwords / PIN <b>or</b> descriptions of biometric system – fingerprints/retinal/DNA scanners/voice recognition  | 1<br><br>(KU) | No other answers    |
| 1        | d |     | Multi User (Database)   | 1<br><br>(KU) | No other answers    |
| 1        | e |     | Single entry multiple use   | 1<br><br>(KU) | No other answers    |
| 1        | f | i   | Any <b>two</b> from: <ul style="list-style-type: none"> <li>Info kept up-to-date / accurate</li> <li>purpose of keeping info stated</li> <li>info not kept longer than necessary</li> <li>register with DPA registrar</li> <li>gather information lawfully</li> <li>do not pass info to other countries which do not have the same levels of security outwith EU</li> <li>pass on information without permission</li> <li>have permission to hold data</li> </ul> | 2<br><br>(KU) | No other answers    |
| 1        | f | ii  | Head teacher  | 1<br><br>(PS) | No other answers    |

| Question |   |    | Expected Answer/s   | Max Mark         | Additional Guidance  |
|----------|---|----|---|------------------|--|
| 2        | a |    | = <u>SUM</u> (C4:F4)  | 1<br><b>(PS)</b> | No other answers   |
| 2        | b | i  | = IF (G4<H\$1, "Yes", "No")   | 3<br><b>(PS)</b> | No other answers<br><br>1 mark for G4<br>1 mark for Yes / No in correct position<br>1 mark for correct use of quotes "" or " |
| 2        | b | ii | ABSOLUTE (cell reference) – 1 mark<br>Reference remains <b>fixed</b> – 1 mark<br>When formula is <b>copied</b> – 1 mark<br><b>or</b><br>Without absolute cell reference (1) the formula would not be copied (replicated) (1) properly as it would change (1) when copied. | 3<br><b>(KU)</b> | If process of copying, eg dragged down / moved down, then award mark.  |
| 2        | c |    | 1 Column H descending – 1 mark<br>2 Column B ascending – 1 mark   | 2<br><b>(PS)</b> | Order is critical  |
| 2        | d | i  | Mail Merge  | 1<br><b>(KU)</b> | No other answers   |
| 2        | d | ii | Data – Charles      Field Name – Forename/Firstname<br>Data – 25              Field Name – Total (Mark)   | 2<br><b>(PS)</b> | No other answers   |
| 2        | e | i  | Compatibility problems – different OS/application or file type not recognised by his software   | 1<br><b>(PS)</b> | Standard File Format – not acceptable here as it's the solution NOT the reason.  |
| 2        | e | ii | Any <b>one</b> from:<br><ul style="list-style-type: none"> <li>• save as standard file format</li> <li>• save as txt</li> <li>• save as ASCII file type</li> <li>• save as RTF</li> </ul>   | 1<br><b>(PS)</b> | Accept updated version of software   |
| 3        | a | i  | An embedded system is a piece of equipment/device that contains a <u>small computer</u> or <u>processor chip</u> , eg a washing machine   | 1<br><b>(KU)</b> | Notion of device containing processor / small computer is needed   |

| Question |   |     | Expected Answer/s  | Max Mark         | Additional Guidance  |
|----------|---|-----|--|------------------|--|
| 3        | a | ii  | ROM (chips)  | 1<br><b>(KU)</b> | No other answers   |
| 3        | a | iii | Analogue signals from the sensors (1) have to be converted to digital so the computer can understand / recognise / process (1) the data.   | 2<br><b>(PS)</b> | Need sensors / notion of how sensor works / and recognition / understanding for both marks.  |
| 3        | b |     | Any <b>two</b> from: <ul style="list-style-type: none"> <li>• <u>large</u> memory/backing storage</li> <li>• <u>powerful</u> processors</li> <li>• (wide) <u>variety</u> of sensors</li> <li>• verbal input of commands via microphones</li> <li>• camera for vision system</li> <li>• ability to communicate with other computers and robots</li> <li>• voice recognition</li> <li>• some indication of learning (with reference to software, eg expert systems or databases)</li> <li>• ability to make its own decisions</li> </ul> | 2<br><b>(KU)</b> | Do NOT accept just sensors <b>or</b> lots of sensors <b>or</b> just memory <b>or</b> just processor  |
| 4        | a |     | A large volume of data (1) will need to be processed at high speed (1) or users will need fast access (1) to large volumes of data (1), (notion of) multi-access (1)   | 2<br><b>(KU)</b> | No other answers   |
| 4        | b |     | <i>Sequential</i> – used by technical staff for backing up the mainframe (1)<br><i>Random access</i> – used by all members of the site for storage of day-to-day activities (1)<br><br>Description of different operation methods acceptable, eg<br><i>Sequential</i> – files accessed <u>in order</u> (1)<br><i>Random access</i> – goes <u>straight to</u> the data (1)  | 2<br><b>(KU)</b> | No other answers   |
| 4        | c |     | “St Ninian’s High School” (1)<br>AND “Aberdeen” <b>or</b> AND Aberdeen (1)<br>AND 2004 <b>or</b> “leaving in 2004” (1)<br><br>Note:<br>1 School name must be in quotes “”<br>2 Search must contain AND or +  | 3<br><b>(PS)</b> | St Ninian’s High School in Aberdeen, 2004 – award <b>no marks</b> for re-iterating the question<br><br>“St Ninian’s High School in Aberdeen”, 2004 – award <b>1 mark</b> for implying use of AND and <b>1 mark</b> for use of “”s. |

| Question |   |    | Expected Answer/s   | Max Mark   | Additional Guidance  |
|----------|---|----|---|--|--|
| 4        | d |    | <p>52*1024 (=53248 bytes) 1 mark<br/>(53248)*8 = 425984 (bits) 1 mark</p> <p>Note:<br/>1 1 mark for multiplying by 1024<br/>2 1 mark for multiplying by 8</p>   | 2<br><br><br><br><br><br><br><br><br><br><b>(PS)</b> | <p>Correct answer on its own = 2 marks</p> <p>Correct steps but wrong/ missing answer = 2 marks</p> <p>Additional steps should be penalised. ie x1024, x1024, x8 = 1 mark only</p> |
| 4        | e | i  | Web-hosting <b>or</b> e-mail facilities <b>or</b> browser <b>or</b> upload/download capabilities  | 1<br><br><br><br><br><br><br><br><br><br><b>(KU)</b> | No other answers   |
| 4        | e | ii | modem   | 1<br><br><br><br><br><br><br><br><br><br><b>(KU)</b> | No other answers   |
| 4        | f |    | <p>Advantage – portability <b>or</b> ease of Internet access</p> <p>Disadvantage – lack of WiFi hotspots / Small screen makes viewing sites difficult / mobile versions of software may be limited / slower download speeds</p>   | 2<br><br><br><br><br><br><br><br><br><br><b>(KU)</b> | Portability = access internet anywhere <b>not</b> 'fit in your pocket' portability,  |
| 5        | a | i  | <p>TYPE = interpreter (1)</p> <p>Reason – translates each line of code as soon as it is entered <b>or</b> highlights mistakes as they are entered</p>   | 2<br><br><br><br><br><br><br><br><br><br><b>(PS)</b> | <p>TYPE – no other answer</p> <p>Type may be wrong while reason is correct so <b>do not</b> deduct 2nd mark</p>  |
| 5        | a | ii | <p>TYPE = compiler (1)</p> <p>Reason – no need for translator when running program <b>or</b> results in program that runs faster <b>or</b> ensures finished program is portable <b>or</b> takes up less memory <b>or</b> source code secure</p>   | 2<br><br><br><br><br><br><br><br><br><br><b>(PS)</b> | <p>TYPE – no other answer</p> <p>Type may be wrong while reason is correct so <b>do not</b> deduct 2nd mark</p>  |
| 5        | b |    | <p><i>Dynamic Linkage</i> – provides live link between applications in the package (1)<br/>If user makes changes to one set of data (1) then changes automatically occur in linked data (1)</p> <p><i>Keyboard Shortcuts</i> – provide quick means of interacting with package (1) user does not have to search through menus (1) clicking combinations of keys is faster (1)</p> | 2<br><br><br><br><br><br><br><br><br><br><b>(PS)</b> | <p>Notion of linking data and automatic updates needed for 2 marks.</p> <p>Notion of time-saving and reason needed for 2 marks.</p>  |

| Question |   |    | Expected Answer/s  | Max Mark               | Additional Guidance  |
|----------|---|----|--|------------------------|--|
| 5        | c |    | ALU – (Arithmetic & Logic Unit) carries out the calculations (1) <b>or</b> logical decisions (1)<br><br>Registers – temporary (1) storage locations  | 1<br><br>1<br><br>(KU) | Notion of temporary nature of storage needed, eg holds data while being processed / used is acceptable |
| 5        | d |    | Memory Management → Operating System allocates suitable storage locations<br>Error Reporting → Message appears – ‘disk full’<br>Managing inputs/outputs → User chooses File, then Save as ...  | 3<br><br>(KU)          | No other answers   |
| 6        | a | i  | Hyper Text Markup Language   | 1<br><br>(KU)          | No other answers   |
| 6        | a | ii | <i>Advantage</i> – universally available / recognised <b>or</b> no costs involved <b>or</b> portable / can be used on range of systems<br><br><i>Disadvantage</i> – difficult to program <b>or</b> need to learn commands <b>or</b> not as easy to use compared to web authoring software <b>or</b> no error reporting | 2<br><br>(KU)          | No other answers   |
| 6        | b |    | Software that is free for only a short period (1) after which you have to pay to use it (1)  | 2<br><br>(KU)          | Try before you buy – 1 mark  |
| 6        | c |    | The wizard will take them through the steps / guides them (1) through the process by getting them to answer a series of questions (1)  | 2<br><br>(PS)          | No other answers   |
| 6        | d | i  | (Area on the web page identified by) a change of cursor shape (1) that gives additional information (1) when clicked <b>or</b> performs an action when clicked / hovered over.   | 1<br><br>(KU)          | Do not accept hyperlink definition, eg takes you to another page/site when clicked                     |
| 6        | d | ii | Easier to add/remove rows/columns <b>or</b> Easier to find / compare information   | 1<br><br>(KU)          | ‘Organised’ in question stem so cannot award marks for easy to read / displayed clearly.               |
| 6        | e | i  | Scanner <b>or</b> scan it  | 1<br><br>(PS)          | No other answer  |

| Question |   |     | Expected Answer/s   | Max Mark         | Additional Guidance              |
|----------|---|-----|---|------------------|----------------------------------|
| 6        | e | ii  | Photograph may be copyrighted <b>or</b> (photograph does not belong to them so) they are breaking the Copyright, Design and Patents Act | 1<br><b>(PS)</b> | Not 'they don't have permission' |
| 6        | e | iii | Get <u>permission</u> from the owner – photographer or the famous ex-pupil <b>or</b> ask the owner                                      | 1<br><b>(PS)</b> |                                  |
| 6        | e | iv  | 1 CROP<br>2 SCALE (resize)  | 2<br><b>(KU)</b> |                                  |

[END OF MARKING INSTRUCTIONS]