



**GCE**

**Applied ICT**

Advanced GCE

Unit **G054**: Software Development

# **Mark Scheme for January 2013**

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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G054

Mark Scheme

January 2013

## Annotations

Annotation	Meaning
^	Something vital to the mark point has been omitted.
BOD	Benefit of the doubt given.
NBOD	Benefit of the doubt <b>not</b> given.
CON	Candidate contradicts him/herself.
NAQ	Candidate has not answered the question as set.
MTP	Candidate has missed the point of the question.
W	Candidate is working towards a mark but has not given enough to receive credit at this point.
NE	Not enough for the candidate to receive credit.
TV	<b>Answer is too vague to receive credit.</b>
FTC	Follow-through credit. When an earlier wrong answer has been penalised, this may be used to show that credit can now be given to a part of the script which depends on that earlier wrong answer. This avoids penalising a candidate twice for the same error, but <b>should only be used where specified by the PE.</b>
MAX	Shows that the maximum number of marks for a part-question or question has been awarded (even though the answer may contain further correct points).
R	The point repeats one already awarded credit.
JE	Candidate has <i>just</i> given enough to be awarded a mark.

## Subject-specific Marking Instructions

There are 100 marks available for this test. They are allocated as follows:

- Tasks 2, 3 and 4                    30
- Section A of the test paper    50
- Section B of the test paper    20

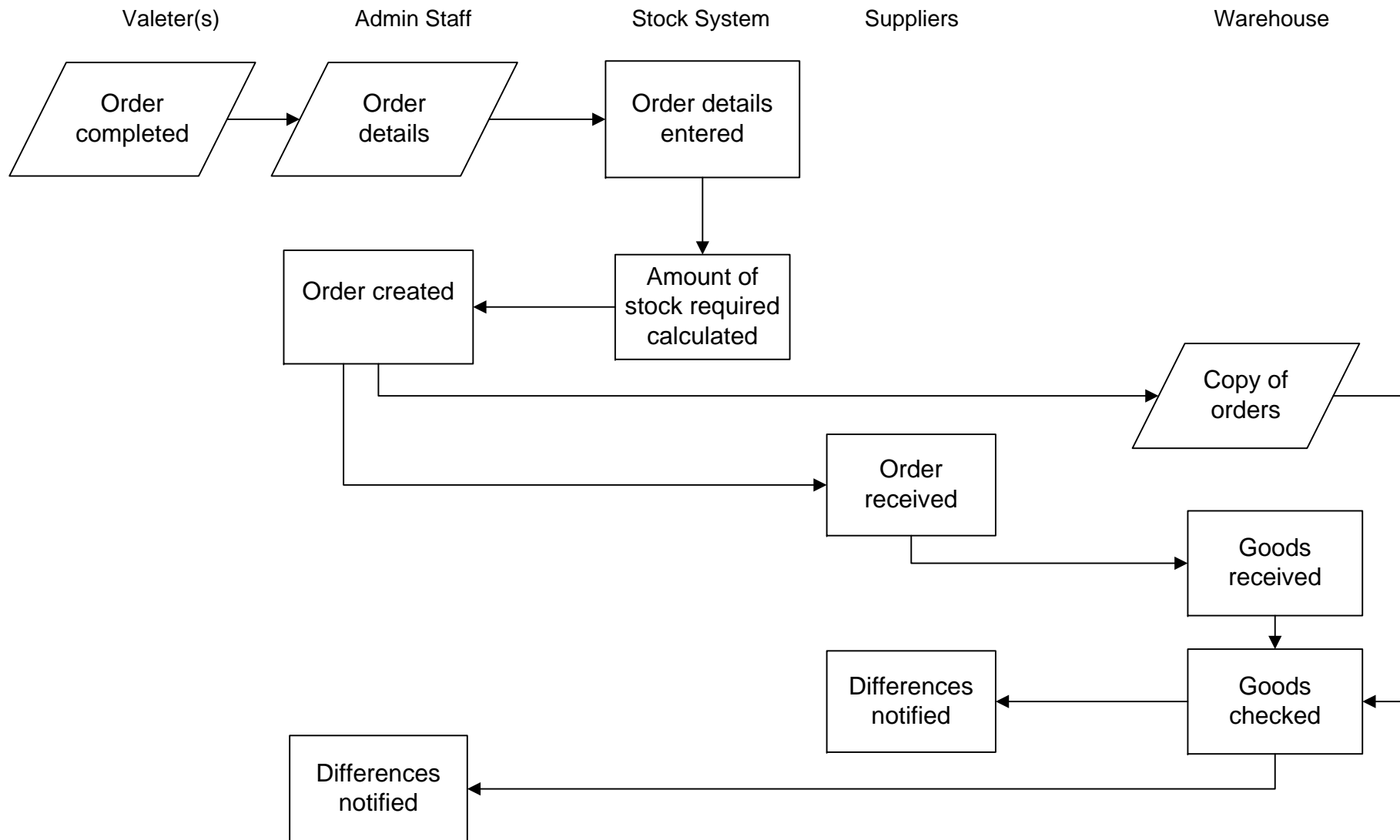
G054

Mark Scheme

January 2013

Task		Answer	Marks	Guidance								
2		<p>1 mark available for identification of:</p> <ul style="list-style-type: none"> <li>• Valeter</li> <li>• Administration Staff</li> <li>• Stock system (spreadsheet)</li> <li>• Suppliers</li> <li>• Warehouse.</li> </ul> <p>1 mark for each correct symbol, in the correct column, with associated flows (Max 7).</p> <p><b>Evaluation – 3 marks available</b></p> <table border="1"> <thead> <tr> <th>Mark</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Some comment on method(s) used to develop systems flowchart</td> </tr> <tr> <td>2</td> <td>A strength/weakness in method(s) used identified</td> </tr> <tr> <td>3</td> <td>A strength and weakness in method(s) used identified</td> </tr> </tbody> </table>	Mark		1	Some comment on method(s) used to develop systems flowchart	2	A strength/weakness in method(s) used identified	3	A strength and weakness in method(s) used identified	15	<p>Max 12 for diagram (Example on the next page) Max 3 for evaluation (AO4).</p> <p>NOTE: TMCW = The Mobile Car Wash</p>
Mark												
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Task 2 Diagram Example



G054

Mark Scheme

January 2013

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3	1 mark for layout of table 1 mark for identification of sections – Rules (conditions) <b>and</b> actions 1 mark for consistent notation 1 mark for correct number of rules 1 mark for all correct conditions 1 mark for all correct actions 1 mark for <b>each</b> correct rule column (Max 4).	10	Example table shown below. <table border="1"> <thead> <tr> <th>Rules</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>Number of cars = 1</td> <td>Y</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Number of cars = 2</td> <td></td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>Number of cars = 3</td> <td></td> <td></td> <td>Y</td> <td></td> </tr> <tr> <td>Number of cars = &gt;4</td> <td></td> <td></td> <td></td> <td>Y</td> </tr> <tr> <td><b>Actions</b></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>No reduction</td> <td>Y</td> <td></td> <td></td> <td></td> </tr> <tr> <td>-£10</td> <td></td> <td>Y</td> <td></td> <td></td> </tr> <tr> <td>-£15</td> <td></td> <td></td> <td>Y</td> <td></td> </tr> <tr> <td>-£20</td> <td></td> <td></td> <td></td> <td>Y</td> </tr> </tbody> </table>	Rules	1	2	3	4	Number of cars = 1	Y				Number of cars = 2		Y			Number of cars = 3			Y		Number of cars = >4				Y	<b>Actions</b>					No reduction	Y				-£10		Y			-£15			Y		-£20				Y
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4	1 mark available for <ul style="list-style-type: none"> <li>• Use of colour/font/white space</li> <li>• Logical order of information</li> <li>• Identification of TMCW/valeters name</li> <li>• Use of validation features such as drop-down list/option buttons</li> <li>• Stock items identified</li> <li>• Stock required</li> <li>• All data/information shown is appropriate with no omissions/extra data required.</li> </ul>	5	1 mark each for (Max 5): Do not accept pre-populated/examples of completed reports.																																																		

G054

Mark Scheme

January 2013

## SECTION A

Question		Answer	Marks	Guidance
1		To increase the security of information (1 <sup>st</sup> ) held on the computers (1) Reduce errors (1 <sup>st</sup> ) by validation of inputs (1) Solve the problems of the current system (1 <sup>st</sup> ) example given (1) To upgrade applications software (1 <sup>st</sup> ) using the same vendors (1).	4	Two from; max 2 marks per purpose.
2	(a)	Pre-populated fields should be included in the order form (1) Date should be automatically changed by the software (1) User errors limited through validation/drop down lists (1) Contain helpful error messages (1).	4	Any 4.
	(b)	New system has a total of 10 computers (1 <sup>st</sup> ) linked in a network (1) Each computer (1 <sup>st</sup> ) is connected to a black and white printer (1) Computers in the main office (1 <sup>st</sup> ) have shared access to a colour laser printer (1) Portable tablet computer (1 <sup>st</sup> ) for each valet/25 required (1).	4	2 from; max 2 per requirement.
3	(a)	Implemented over a weekend (1 <sup>st</sup> ) when TMCW is closed (1) to minimise disruption (1).	3	
	(b) (i)	Budget (1).	1	Correct answer only.
	(ii)	£15000 (1) to cover hardware, software and installation costs (1).	2	To be awarded marks for this part of the question b(i) must be correct.

G054

Mark Scheme

January 2013

Question	Answer	Marks	Guidance
4	<p><b>Explanation</b>  User requirements are what are required from the system (1)  Defined by the end-user(s) of the system (1)  Can be generic/specific (1).</p> <p><b>Examples</b>  To produce reports (1) Example of reports to be produced (1)  For orders to be submitted electronically (1) Use an order form  template for valeters stock orders (1)  To keep a database of customers/suppliers(1) For  suppliers/customers to be identified by a unique number (1)  To keep a record of appointments/orders (1) system to show  appointments for the day/stock system shows re-order levels (1).</p>	6	Max 3 for explanation Max 4 for examples provided.



Question		Answer	Marks	Guidance										
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5		<p>Answers may include:</p> <p>The new system completely replaces the old on a given day.</p> <p><b>Advantages</b>            Quickest implementation method            Reduced costs in terms of budget and time.</p> <p><b>Disadvantages</b>            Implementation must be fully planned            Any problems found in the system lead to data loss and/or failure of TMCW            Can cause extra work/stress on staff if a problem occurs            Training may not have covered all aspects of system required to do job            Can be difficult to fully and completely test the new system prior to implementation.</p> <p><b>Examples</b>            TMCW need to implement system at a weekend            All data files will need to be backed up and kept safe            May be implemented at end of month to reduce risks of impact to TMCW.</p>	12		<table border="1"> <thead> <tr> <th>Band</th> <th>Mark Range</th> <th></th> </tr> </thead> <tbody> <tr> <td>H</td> <td>9–12</td> <td> <p>Candidates will show a clear understanding of the question and include <b>detailed</b> evaluation including the advantages <b>and</b> disadvantages of the use of the direct implementation method.</p> <p>Candidates provide a conclusion clearly justifying the use/or not of the direct implementation method.</p> <p>Examples will relate to TMCW</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.</p> </td> </tr> <tr> <td>M</td> <td>5–8</td> <td> <p>Candidates will show an understanding of the question and include an evaluation including the advantages <b>and</b> disadvantages of the use of the direct implementation method or answers may be limited or one-sided.</p> <p>Candidates provide a conclusion relating to the use/or not of the direct implementation method This may be limited in scope or implied.</p> <p>The information will be presented in a structured format.</p> <p>There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</p> </td> </tr> </tbody> </table>	Band	Mark Range		H	9–12	<p>Candidates will show a clear understanding of the question and include <b>detailed</b> evaluation including the advantages <b>and</b> disadvantages of the use of the direct implementation method.</p> <p>Candidates provide a conclusion clearly justifying the use/or not of the direct implementation method.</p> <p>Examples will relate to TMCW</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly.</p>	M	5–8	<p>Candidates will show an understanding of the question and include an evaluation including the advantages <b>and</b> disadvantages of the use of the direct implementation method or answers may be limited or one-sided.</p> <p>Candidates provide a conclusion relating to the use/or not of the direct implementation method This may be limited in scope or implied.</p> <p>The information will be presented in a structured format.</p> <p>There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</p>
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G054

Mark Scheme

January 2013

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						L	0–4	<p>Candidates will demonstrate a limited understanding of the question. Information may be a list of points, with little explanation.</p> <p>Examples may not relate to TMCW.</p> <p>Information will be poorly expressed and there will be a limited, if any, use of technical terms. Errors of grammar, punctuation and spelling may be intrusive.</p>

G054

Mark Scheme

January 2013

Question		Answer	Marks	Guidance
6	(a)	<p><b>Advantage</b>  All staff at TMCW/large numbers of people can be asked the same questions (1) so analysis/comparisons are easy to formulate (1)  Less cost/time than interviews (1) for large numbers of people/over 25 staff at TMCW (1)  Responses can be anonymous (1) may provide honest answers (1).</p> <p><b>Disadvantage</b>  If questions are not designed carefully (1) may get unhelpful responses (1)  Cannot guarantee 100% return rate (1) so analysis may be irrelevant (1)  Further details/clarification (1) can be difficult to get from staff (1).</p>	6	<p>2 advantages; max 2 per advantage. Max 4</p> <p>1 disadvantage max 2.</p>
7		<p>To identify potential problems (1) and solve them before they occur (1)  To increase the shelf-life of the system (1)  To maintain the integrity of the system (1).</p>	4	Any 4 from list given.
8		<p>As changes are made to the system (1<sup>st</sup>) these can be tracked (1)  Version details can be checked (1<sup>st</sup>) to ensure that the most up-to-date documents are being used (1)  Version details are updated (1<sup>st</sup>) as changes are made to the system (1).</p>	4	
9		<p>Memory capacity (1)  Storage devices (1)  Peripheral specifications (1)  Data capture equipment (1)  Communication equipment (1).</p>	2	Any 2 from list given.

G054

Mark Scheme

January 2013

Question		Answer	Marks	Guidance
10	(a)	A record of data about data (1) entries held about data elements (1) includes structures/flows/stores/processes (1) enables future maintenance/development (1) to see structure of database being used (1).	4	Any 4 from list given.
	(b)	Name (1) Description (1) Aliases (1) Type (1) Format (1) Values (1) Security (1) Editing (1) Comments (1).	2	Any 2 from list given, 1 mark each.
11		<b>Physical</b> Locks on doors/windows (1 <sup>st</sup> ) only authorised people/owner has keys limiting access (1) Cages/locks on computer (1 <sup>st</sup> ) to prevent theft (1) Back-ups held off-site (1 <sup>st</sup> ) can be used in case of emergency (1) Blinds at windows (1 <sup>st</sup> ) limits how much can be seen when offices are closed (1) CCTV cameras (1 <sup>st</sup> ) can video/live stream what is happening (1).  <b>Logical</b> Access Levels (1 <sup>st</sup> ) users only have access to the data/information needed to complete their jobs (1) User Names/Passwords (1 <sup>st</sup> ) determines access to information/data. (1)	4	One from each type  Max 2 marks per type.

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12		<p>Answers may include:</p> <p><b>Advantages</b>            No cost involved as member of staff training is already getting paid            Other staff do not have to cover work load if a member of staff is out of office            Convenience new staff can ask questions as situations arise            All situations can be covered as long as training period is long enough            Existing staff can take the role of mentor.</p> <p><b>Disadvantages</b>            Skills and knowledge passed may include incorrect knowledge or bad working practices            Pressure of working day may not provide suitable time span to pass on new skills            Decisions need to be made whether training takes place on one-to-one basis or in a group            Staff doing training may fall behind with own work.</p>	8		<table border="1"> <thead> <tr> <th>Band</th> <th>Mark Range</th> <th></th> </tr> </thead> <tbody> <tr> <td>H</td> <td>6–8</td> <td> <p>Candidates will show a clear understanding of the question and include <b>detailed</b> evaluation including the advantages <b>and</b> disadvantages of the use of the on-site/on-the-job training method.</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation.            Technical terms will be used appropriately and correctly.</p> </td> </tr> <tr> <td>M</td> <td>3–5</td> <td> <p>The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</p> <p>Candidates will show an understanding of the question and include an evaluation including the advantage(s) <b>and</b> disadvantage(s) of the use of the on-site training method. Evaluation may be limited or one-sided.</p> </td> </tr> <tr> <td>L</td> <td>0–2</td> <td> <p>Candidates will demonstrate a limited understanding of the question.</p> <p>Information may be a list of advantage(s) <b>or</b> disadvantage(s), with little explanation.</p> <p>Information will be poorly expressed and there will be a limited, if any, use of technical terms.</p> <p>Errors of grammar, punctuation and spelling may be intrusive.</p> </td> </tr> </tbody> </table>	Band	Mark Range		H	6–8	<p>Candidates will show a clear understanding of the question and include <b>detailed</b> evaluation including the advantages <b>and</b> disadvantages of the use of the on-site/on-the-job training method.</p> <p>The information will be presented in a structured and coherent form. There will be few if any errors in spelling, grammar and punctuation.            Technical terms will be used appropriately and correctly.</p>	M	3–5	<p>The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</p> <p>Candidates will show an understanding of the question and include an evaluation including the advantage(s) <b>and</b> disadvantage(s) of the use of the on-site training method. Evaluation may be limited or one-sided.</p>	L	0–2	<p>Candidates will demonstrate a limited understanding of the question.</p> <p>Information may be a list of advantage(s) <b>or</b> disadvantage(s), with little explanation.</p> <p>Information will be poorly expressed and there will be a limited, if any, use of technical terms.</p> <p>Errors of grammar, punctuation and spelling may be intrusive.</p>
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