OCR
RECOGNISING ACHIEVEMENT

GCE

Applied ICT

Advanced GCE

Unit **G054:** Software Development

Mark Scheme for June 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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1. **Annotations**

Annotation	Meaning
^	Something vital to the mark point has been omitted.
BOD	Benefit of the doubt given.
NBOD	Benefit of the doubt **not** 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	**Answer is too vague to receive credit.**
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 **should only be used where specified by the PE**.
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 *just* given enough to be awarded a mark.

2. **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

<table>
<tr><th colspan="3">Task</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>2</td><td></td><td></td><td>12 marks available for L1 DFD (See attached example)

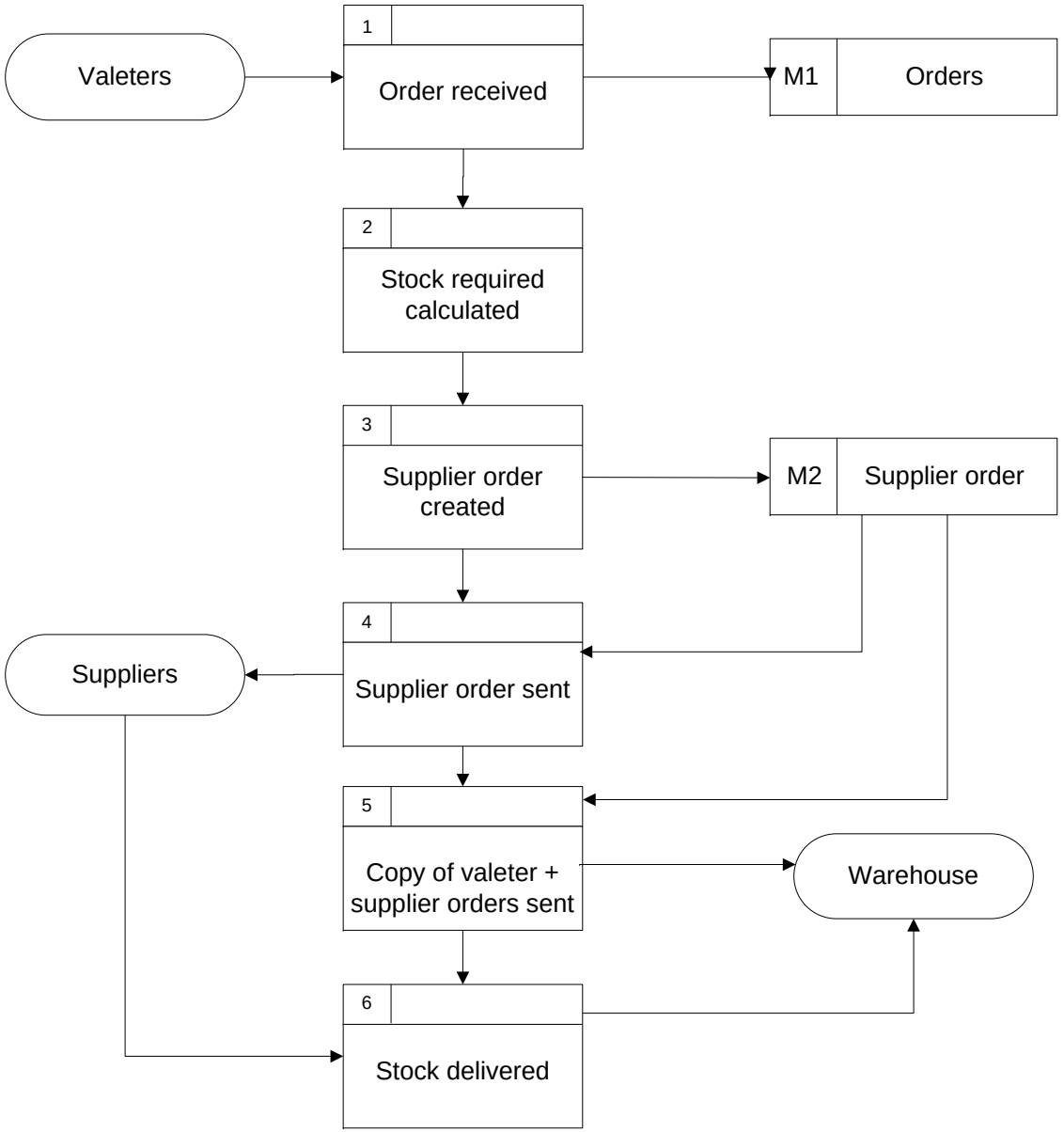
1 mark available for each of:
Consistency – C
Valeter(s) clearly identified – V
Warehouse clearly identified – W
Supplier(s) clearly identified – S
Logical order of processes – L
Direction of flows identified – D
If V, W and S marks awarded then:
1 mark for each correct process and associated data stores/processes/external entity (Max 6).
Evaluation

<table><tr><td>Mark</td><td></td></tr><tr><td>1</td><td>Some comment on method(s) used to develop L1 DFD</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></table></td><td>15</td><td>Max 12 for diagram.

Max 3 for evaluation (AO4).

NOTE: TMCW = The Mobile Car Wash</td></tr>
</table>

Task 2 Example



Task			Answer	Marks	Guidance

3			1 mark for:
			• correct syntax
			• all/4 conditions given
			• each correct condition (Max 4)
			• each correct outcome (Max 4)
			• EndIf (or appropriate end condition) included.
				10	Example Structured English shown below*.
					
					If number of cars = 1 then
					Reduction = £0
					Else
					If number of cars = 2 then
					Reduction = £10
					Else
					If number of cars = 3 then
					Reduction = £15
					Else
					If number of cars >= 4 then
					Reduction = £20
					EndIf
					
					Any recognisable form of structured English is acceptable*.

Task			Answer	Marks	Guidance
4			1 mark each for (Max 5): • Use of colour/font/white space • Logical order of information • Identification of TMCW • Customer details including unique identifier • Date and Times of appointments • Location/address of appointment • Number of cars to be valeted • Size/type of cars to be valeted • Service required • Allocated valeting staff • Validation/use of drop-down lists • All data/information shown is appropriate with no omissions/extra data required.	5	1 mark each for (Max 5): Do not accept pre-populated/examples of completed user interface.

SECTION A

Question			Answer	Marks	Guidance
1			**Explanation** To ensure all problems in current system have been identified (1) To make sure all requirements of the new system have been defined (1) To act as a reference point (1st) to ensure that the new system meets the requirements of TMCW (1) or the new system will not be appropriate for TMCW (1). **Examples** To upgrade applications software system to the same versions (1) To increase the security of information (held on all computers) (1). To produce reports for the owner (1) example of report (1) To keep records of customers (who have or currently use TMCW) (1) To keep records of suppliers (and the stock they supply) (1) To reduce errors (1st) all calculations automated/validation of input (1).	6	Max 4 for explanation. Allow up to 3 marks for examples.
2	**(a)**		Input errors be limited (1) by automatic facilities of software (1) Re-order level shown (1) for each stock item (1).	2	1 from list given, max 2.
	(b)		Customer contact details be accessed (1) through unique customer number (1) To access weekly appointments of valeters (1) to confirm/ensure available customer appointments (1) Have access to the supplier system (1) to access all supplier details (1) Details of orders (1) to be recorded (1).	4	2 from list given, max 2 per requirement.

Question			Answer	Marks	Guidance
3	**(a)**		Provide a tablet computer (1st) which is portable (1) and can communicate electronically/send emails (1).	3	
	(b)	**(i)**	Software (1).	1	Correct answer only.
		(ii)	Vendor (1st) of applications software (1) to be kept the same (1).	3	To be awarded marks for this part of the question b(i) must be correct.
4			Valeters phone their order (1) may have poor mobile signal (1) Quantity of stock required (1) has been incorrectly recorded (1) Name of valeter (1) has been incorrectly recorded (1) Quantity of stock required (1) cannot be read (1) Incorrect stock order (1) collated in crates/warehouse (1).	6	2 marks each up to a max of 6.
5			Database (1st) eg queries can be run (1) to target specific customers/and saved for future use/or other example given (1) searches can be carried out (1) using a Primary key/unique customer number as requested (1).	3	

Question			Answer	Marks	Guidance
6			**Advantages** Support/online help/books/training courses (1) readily available (1) Will have been tested by many people (1) if errors are found patches can be released (1) Available immediately (1) do not have to go through systems life-cycle (1) Lots of choices available (1) can select software from vendor currently being used (1) Will use a common file format (1) so data can be transferred to new software with limited disruption/corruption (1) Staff may already be familiar with vendor of software (1) limits costs of training (1). **Disadvantages** May have to be altered (1) may never fully meet user requirements Will have many additional features (1) that are not needed/ used (1) Larger footprint (1) more memory may need to be installed (1).	6	2 advantages, max 2 per advantage. 1 disadvantage, max 2.
7			Corrective/remedial (1st) an error has been undetected during testing (1) the system appears to be working as required (1) but does not process the data (1) as TMCW require (1) usually corrected by patches (1).	4	

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th colspan="2">Guidance</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Content</td><td>Levels of response</td></tr>
<tr><td>8</td><td></td><td></td><td>Answers may include:

Customers details must be processed fairly and lawfully and they must give their consent to TMCW holding their details.

TMCW must tell customers what they are going to do with their data.

Too much data should not be asked for from customers, and it must be relevant to TMCW.

TMCW must ensure, by checking with customers that their data is accurate and must change it if there are any inaccuracies.

Data cannot be held longer than is necessary so if a customer stops having their car valeted TMCW must remove their data.

TMCW must make sure its computer systems are secure.</td><td>12</td><td></td><td>
<table>
<tr><th>Band</th><th>Mark Range</th><th></th></tr>
<tr><td>H</td><td>9–12</td><td>Candidates will show a clear understanding of the question and include detailed explanations, with examples, of how TMCW can comply with Data Protection Act (DPA).

All examples will relate to TMCW.

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.</td></tr>
<tr><td>M</td><td>5–8</td><td>Candidates will show an understanding of the question. Limited explanations, with examples, are given of how TMCW can comply with the DPA.

Examples given relate to TMCW.

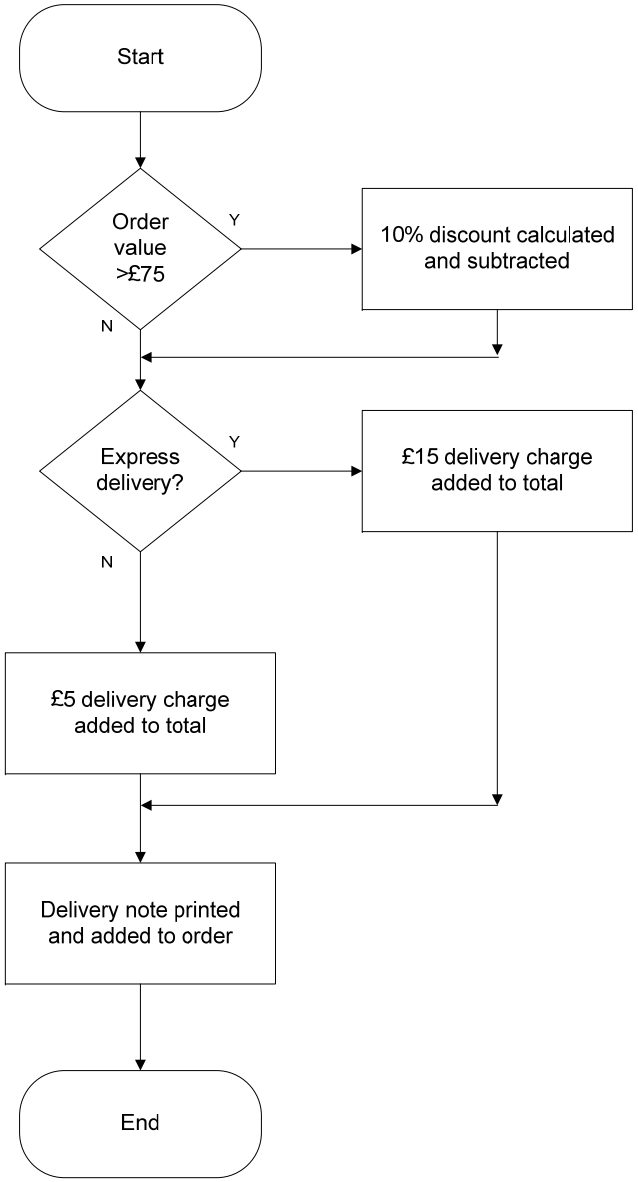
The information will be presented in a structured format. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct.</td></tr>
<tr><td>L</td><td>0–4</td><td>Candidates will demonstrate a limited understanding of the question. Information may be a list of points, with descriptions rather than explanations.

Examples may not relate to TMCW.

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.</td></tr>
</table>
</td></tr>
</table>

Question			Answer	Marks	Guidance
9			Data required for output (1) Printed/screen report layouts (1)	2	Any 2 from list given.
10	**(a)**		Checks that the data input (1) is the same as the original source of the data (1).	2	
	(b)		Type check (1) Input masks (1) Length checks (1) Range checks (1) Presence checks (1).	1	Any 1 from list given.
11			Start and End (1) Decision boxes – including Y & N (2*1) Process boxes (4*1).	7	See example flowchart Max 2 for correct decisions Max 4 for process boxes.

Q11 diagram


Start
Order value >£75
Y
N
10% discount calculated and subtracted
Express delivery?
Y
N
£15 delivery charge added to total
£5 delivery charge added to total
Delivery note printed and added to order
End

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th colspan="2">Guidance</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Content</td><td>Levels of response</td></tr>
<tr><td>12</td><td></td><td></td><td>Answers may include:

Description
A diagrammatical way of representing the flow of data/information in a system
Generally accepted as DFD’s.

Advantages
Analyst is able to clearly break down the system under investigation
Diagrams can be easier for non-specialists to understand
Documents/data stores and processes can be clearly linked
Shows external entity interaction with system.

Disadvantages
Many different ways of developing a DFD
Lots of different symbols can be used
Easy to become very large
Can be difficult to see all processes/data stores and the interaction.</td><td>8</td><td></td><td>
<table>
<tr><th>Band</th><th>Mark Range</th><th></th></tr>
<tr><td>H</td><td>6–8</td><td>Candidates will show a clear understanding of the question and include detailed explanations of the advantages and disadvantages of the use of a formal method of modelling data flows.
Candidates provide a conclusion clearly justifying the use of a formal method of modelling data flows in the systems life cycle.
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.</td></tr>
<tr><td>M</td><td>3–5</td><td>Candidates will show an understanding of the question and include explanations of the advantage(s) and disadvantage(s) of the use of a formal method of modelling data flows. Explanations may be limited.
Candidates provide a conclusion relating to the use of a formal method of modelling data flows in the systems life cycle. This may be limited in scope.
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.</td></tr>
<tr><td>L</td><td>0–2</td><td>Candidates will demonstrate a limited understanding of the question.
Information may be a list of advantages or disadvantages, with little explanation.
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.</td></tr>
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