

GCE

ICT

Unit **G061**: Information, Systems and Applications

Advanced Subsidiary GCE

Mark Scheme for June 2018

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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.

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These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Stamp	Ref No.	Annotation Name	Description
	151	Highlight	Highlight (mandatory for all units)
	181	Off Page Comment	Off page comment (mandatory for all units)
	1681	BP	Blank page (mandatory for all units)
	261	^	Omission mark
	1741	ZERO	Zero (big)
	11	Tick	Tick
	201	TV	Too vague
	271	REP	Repeat
	211	P	Point being made (Removed for later additions)
	191	NBOD	Benefit of doubt not given
	501	NAQ	Not answered question
	41	FT	Follow through
	221	E	Expansion of a point (Removed for later additions)
	21	Cross	Cross
	351	C	Subordinate clause/Consequential error (Removed for later additions)
	31	BOD	Benefit of doubt – if used, make sure a tick is also given
	701	/	Slash (Removed for later additions)
	331	L3	Level 3 (Added later)

	321	L2	Level 2 (Added later)
	311	L1	Level 1 (Added later)
	811	SEEN	Noted but no credit given (Added later)
	1381	V Wavy Line	Extendable vertical wavy line (Added later)
	1371	H Wavy Line	Extendable horizontal wavy line (Added later)

Question	Answer	Marks	Guidance
1a	1 from: <ul style="list-style-type: none"> • unprocessed (1) • raw facts and figures (1) • alphanumeric (characters) (1) • no structure (1) • no meaning (1). 	1	
1b	4 from, one for example for each, eg: <ul style="list-style-type: none"> • data: 27082014 (1) • context: UK date (1) NOT date or date or birth • structure: dd/mm/yyyy (1) • meaning: date of birth of dog / date of stay of dog (1). 	4	Must be related to the kennels. Data can be anything Structure is not 12/12/18 – must be more than numbers
1c	1 from eg: <ul style="list-style-type: none"> • Age would need to be updated every year (1). • Age can be automatically calculated from date of birth (1). 	1	
1d	3 from, 1 mark each, eg: <ul style="list-style-type: none"> • length (1): date of birth of dog – 15/06/2010 – length of 10 (1), could enter 16/06/2010 (1) • type (1): date of birth of dog – 15/06/2010 – type is date (1), could enter 16/06/2010 (1) • range (1): date of birth of dog – 15/06/2010 – range could be 01/01/1995 – Today's date (1), could enter 16/06/2010 (1) • format/picture (1): date of birth of dog – 15/06/2010 – format is dd/mm/yyyy, (1) could enter 16/06/2010 (1) / could enter date in American format mm/dd/yy so 10/06/2010 is entered as 06/10/2010 (1) • presence (1) date of birth of dog 15/06/2010 (1) could enter rhubarb (1). 	3	Candidate needs to give some data showing how it can meet the rule but be incorrect. If method is incorrect – no marks for example

Question	Answer	Marks	Guidance
1ei	2 from: <ul style="list-style-type: none"> • Comparing source (1) and object data (1). • Comparing data before (1) and after transfer (1). 	2	
1eii	2 from: <ul style="list-style-type: none"> • Proof reading (1) • Manual (verification) (1) • Computer (verification) (1) • Double entry (1) 	2	No examples or descriptions
2a	2 from, 2 marks each, eg: <ul style="list-style-type: none"> • Do not have to understand the language/multilingual (1) to get the message (1). • Can match the physical shapes (1) pictures to actions (1). E.g. pictures of tick for good • Can get message across simply (1) eg happy dog in a picture is quick to understand (1). 	4	Not attracts audience
2b	2 marks for two factors and how linked, 1 mark for example: <ul style="list-style-type: none"> • A reduced level of detail (1) is similar to incomplete data (1) for example “ring us” (1). • Data not all present (1) such as a dog has a medical condition (1) is both incomplete as does not tell what the condition is and lacks details as does not give required information (1). • Day and month of birth cannot be used to determine age (1) without year of birth (1) and current date (1). • Example of complete or level of detail only (1) 	3	Max 2 if no example.

Question	Answer	Marks	Guidance												
3	<p>1 mark for device, eg: Camera/scanner/keyboard/touch screen (1)</p> <p>Marked as per grid below.</p> <table border="1" data-bbox="338 336 1574 579"> <tr> <td>High</td> <td>5-6</td> <td>Candidate has given detailed reasons why the hardware device should be used</td> </tr> <tr> <td>Medium</td> <td>3-4</td> <td>Candidate has described advantages for using the hardware device in the given situation.</td> </tr> <tr> <td>Low</td> <td>1-2</td> <td>Candidate has identified advantages for using the hardware device in the given situation.</td> </tr> <tr> <td></td> <td>0</td> <td>Nothing of credit in response.</td> </tr> </table> <p>Answers could include: Camera as it can give an accurate representation of the data and remove any possibility of spelling mistakes. Scanner do not have to retype the information which may lead to mistakes being entered into the computer. Keyboard most people can use a keyboard, comes with the computer so no extra money needed to purchase, Touch screen as an additional hardware device (keyboard) is not required and the computer can take up less space on the desk.</p>	High	5-6	Candidate has given detailed reasons why the hardware device should be used	Medium	3-4	Candidate has described advantages for using the hardware device in the given situation.	Low	1-2	Candidate has identified advantages for using the hardware device in the given situation.		0	Nothing of credit in response.	7	<p>If no device given, and device not named in justification then 0 marks.</p> <p>If incorrect device but correct device in justification then max 6.</p> <p>Not a description of the device Tick the device only, no other ticks on the page</p>
High	5-6	Candidate has given detailed reasons why the hardware device should be used													
Medium	3-4	Candidate has described advantages for using the hardware device in the given situation.													
Low	1-2	Candidate has identified advantages for using the hardware device in the given situation.													
	0	Nothing of credit in response.													
4	<ul style="list-style-type: none"> • hardware: something you can touch/physical (1) • example eg monitor/keyboard/mouse (1) • software: code/instructions/programming/application/runs on hardware (1) • example: eg operating system/word processing (1). 	4	Allow brand names.												
5a	<p>2 from, 2 marks each, 1st for identification, 2nd for advantage:</p> <ul style="list-style-type: none"> • Allows 'what if' to be used (1) different scenarios can be tried to find the best one/allow use of example related to scenario (1). • Variables can be used (1) these can be changed to try different scenarios without rebuilding the model (1). • Graphs can be created (1) presenting the data in an easier to understand way (1). • Once the formulae have been set up (1) there will be no errors in the resulting calculations (1). • Using a calculator for each scenario (1) may introduce errors each time (1). • Use of formulae (1) modelling other values is much quicker than using a calculator (1) 	4													

Question	Answer	Marks	Guidance
	<ul style="list-style-type: none"> Automatic recalculation (1) do not have to create a new model (1) 		
5b	<p>2 marks each, 1 for description, 2nd for example:</p> <ul style="list-style-type: none"> Variable: can be changed / used as a reference in a calculation (1). Example: Number of kennels / cost per dog (1). Formula: calculation that uses values/cells (1). Example: Number of days kennel is occupied = number of kennels * average occupation (1). 	4	<p>Examples must relate to spreadsheet given in question.</p> <p>If no example, then max 1 per description.</p>
5c	<p>2 marks each, 1 for description, 2nd for example:</p> <ul style="list-style-type: none"> Absolute: do not change/they refer to the same cell/made absolute by \$/named range/<u>when copied</u> cell reference does not change (1). Example: multiplication of total number of days by number of kennels (absolute) OR multiplication of total number of days by Cost per dog (absolute) Relative: changes/if copying down the row changes/if copying across the column changes/<u>when copied</u> cell reference changes (1). Example: Number of days kennel occupied/number of days kennel occupied in Total number of days formula (1). 	4	<p>Examples must relate to spreadsheet given in question.</p> <p>If no example, then max 1 per description.</p> <p>Allow whole cell or part cell answers.</p>
6ai	<p>2 from, 2 marks each, 1 for identification, 2nd for expansion:</p> <ul style="list-style-type: none"> Reduces data duplication (1) data is only stored once reducing storage requirements/improves consistency (1). Improves integrity (1) only one set of data is stored which makes it trustworthy (1). Allows for future development (1) data is broken down and can be used for any purpose (1). Simpler to maintain (1) updates on need to be done once (1) 	4	
6aii	<p>1 from, 1 for identification, 2nd for expansion:</p> <ul style="list-style-type: none"> Reduced database performance (1) greater use of resources to combine data (1). Use of database will affect its performance (1) reporting systems use unnormalised data better (1). Storage of historical data (1) breaks rules of normalisation/ data calculated could be incorrect (1). 	2	

Question	Answer	Marks	Guidance												
6b	2 from: <ul style="list-style-type: none"> • atomic data/one data item per field (1) • primary key/record uniquely identifiable (1) • unique table name (1) • Unique field names (1) • no repeating groups of fields (1). • 	2	Do not accept duplicated data.												
6c	<table border="1" data-bbox="524 485 1541 727"> <thead> <tr> <th><i>Field</i></th> <th><i>Data type</i></th> <th><i>Why this data type has been chosen</i></th> </tr> </thead> <tbody> <tr> <td><i>Feeding time</i></td> <td>Date/Time(1)</td> <td>Contains a time (1)</td> </tr> <tr> <td><i>Weight of dog</i></td> <td>Real (1)</td> <td>Weight contains decimal places (1)</td> </tr> <tr> <td><i>Owner's postcode</i></td> <td>String/Text/Alphanumeric (1)</td> <td>Contains text (1)</td> </tr> </tbody> </table>	<i>Field</i>	<i>Data type</i>	<i>Why this data type has been chosen</i>	<i>Feeding time</i>	Date/Time(1)	Contains a time (1)	<i>Weight of dog</i>	Real (1)	Weight contains decimal places (1)	<i>Owner's postcode</i>	String/Text/Alphanumeric (1)	Contains text (1)	6	Do not accept number. Mark reason even if type is incorrect Accept float for real
<i>Field</i>	<i>Data type</i>	<i>Why this data type has been chosen</i>													
<i>Feeding time</i>	Date/Time(1)	Contains a time (1)													
<i>Weight of dog</i>	Real (1)	Weight contains decimal places (1)													
<i>Owner's postcode</i>	String/Text/Alphanumeric (1)	Contains text (1)													
6d	3 from eg: <ul style="list-style-type: none"> • <u>table</u> name (1) • relationships (1) • Primary Key (1) • Foreign Key (1) • <u>field</u> name (1) • validation (1) • security (1) • length/size (1). • 	3	Do not mark Data Type. Accept Key (1) but do not then accept primary/foreign key												
6ei	All 4 correct 2 marks, 3 correct 1 mark: W = Windows I = Icons M = Mouse/Menus P = Pull Down Menus/Pointer,	2	If 1 or 2 correct only then 0 marks. If Menu then must be pointer.												

Question	Answer	Marks	Guidance								
6eii	1 from: <ul style="list-style-type: none"> • forms (1) • dialogue (1) • GUI • natural language (1). 	1	Do not accept WIMP. Do not accept CLI.								
6f	2 from, 2 marks each, 1 for identification, 2 nd for expansion: <ul style="list-style-type: none"> • Only options used are present/simplify interface (1) less confusing/faster learning for staff (1). • Can mirror paper forms (1) staff can input data faster (1). • Limited options increases validation (1) data more likely to be accurate/reduces mistakes (1). • Reduces time take to enter data (1) increase in staff productivity (1). 	4	Allow mix and match. Do not mark descriptions of the interface								
7a	<table border="1" data-bbox="353 675 719 815"> <thead> <tr> <th>Number Correct</th> <th>Mark</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>3</td> </tr> <tr> <td>3</td> <td>2</td> </tr> <tr> <td>2</td> <td>1</td> </tr> </tbody> </table> <p data-bbox="353 858 741 986"> Create advert Link advert to data source Insert merge fields into advert Preview advert </p>	Number Correct	Mark	4	3	3	2	2	1	3	Must be on correct line to be deemed correct (cross incorrect ones – easier to mark)
Number Correct	Mark										
4	3										
3	2										
2	1										
7b	2 from, 2 marks each, 1 for identification, 2 nd for expansion eg: <ul style="list-style-type: none"> • Readily available (1) do not have to wait/organise photographer (1). • Large range of images (1) likely to find one you want (1). • Categories of images (1) can narrow down search (1). • Does not have to be designed (1) saves time (1). • Images are more likely to be available in a useable format (1) in the desired quality/resolution/size (1). 	4	Allow mix and match. NOT royalty free NOT quality								
7c	2 from, 2 marks each, 1 for identification, 2 nd for expansion eg: <ul style="list-style-type: none"> • Content is generic (1) not personal and customer likely not to read it (1). • Database needs to be up to date (1) mistakes in one system are transferred (1). • Mistake in one letter (1) appears in them all (1). 	4	Allow mix and match.								

Question	Answer	Marks	Guidance												
	<ul style="list-style-type: none"> Complex mail merges require experienced staff (1) training costs (1). Customers are likely to disregard it/throw it away (1) as perceived as junk mail (1). Requires IT-trained staff (1) as can be complex procedure (1). 														
8a	<p>2 from, 2 marks each, 1 for identification, 2nd for expansion eg:</p> <ul style="list-style-type: none"> Website can be easily created (1) in a short amount of time (1). Inexperienced staff will be able to create the website (1) without expensive training (1). Step by step approach (1) ensures all elements of the website are covered (1). Pre made templates (1) get website up and running faster (1) 	4	<p>Allow mix and match.</p> <p>Not easy to use</p>												
8b	<p>Marked as per grid below:</p> <table border="1" data-bbox="353 552 1677 798"> <tbody> <tr> <td data-bbox="353 552 517 655">High</td> <td data-bbox="521 552 613 655">5–6</td> <td data-bbox="618 552 1677 655">The candidate has identified positive point(s) and negative point(s) with reason(s) for using bitmap graphics on the website. There is a reasoned conclusion.</td> </tr> <tr> <td data-bbox="353 659 517 724">Medium</td> <td data-bbox="521 659 613 724">3–4</td> <td data-bbox="618 659 1677 724">The candidate has identified point(s) with reason(s) for using bitmap graphics on the website.</td> </tr> <tr> <td data-bbox="353 727 517 793">Low</td> <td data-bbox="521 727 613 793">1–2</td> <td data-bbox="618 727 1677 793">The candidate has identified points for using bitmap graphics on the website.</td> </tr> <tr> <td data-bbox="353 796 517 798"></td> <td data-bbox="521 796 613 798">0</td> <td data-bbox="618 796 1677 798">Nothing of credit in response.</td> </tr> </tbody> </table> <p>Points may include: Quality of bitmap image when on a high resolution screen – reduces. Large memory size of bitmap image – time to download and store on devices such as phones. Bitmap is a common format and used on all websites.</p>	High	5–6	The candidate has identified positive point(s) and negative point(s) with reason(s) for using bitmap graphics on the website. There is a reasoned conclusion.	Medium	3–4	The candidate has identified point(s) with reason(s) for using bitmap graphics on the website.	Low	1–2	The candidate has identified points for using bitmap graphics on the website.		0	Nothing of credit in response.	6	
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8c	<p>3 from eg:</p> <ul style="list-style-type: none"> font size (1) font style/type/family (1) font colour (1) background colour (1) logo (1) positioning of elements (1). 	3	<p>Do not accept font without qualification.</p> <p>Must appear in advert and website.</p>												
8di	Data that does not/seldom change(s) / remains the same after page refresh (1).	1	Allow edited												

Question	Answer	Marks	Guidance
8dii	2 from eg: <ul style="list-style-type: none"> • name of company (1) • address of company (1) • logo of company (1). 	2	
8e	2 from, 2 marks each, 1 for identification, 2 nd for explanation eg: <ul style="list-style-type: none"> • Passwords (1) only those that know it can access the feed (1). • Encryption (1) if the feed is intercepted then without the key it cannot be viewed (1). 	4	
9a	2 from, 2 marks each, 1 for identification, 2 nd for explanation eg: <ul style="list-style-type: none"> • Staff can use any computer (1) do not need specific work area (1). • Centralisation of anti virus/backup/security (1) staff do not have to worry about backing up etc (1). • If one computer breaks down (1) staff can use another computer and access the same data (1). • All computers can be attached to a central peripheral/printer (1) do not have to bother/wait for staff to log off/log on to print (1). • Emails can be sent (1) and picked up from any machine/faster response to query from other staff (1). • Share documents (1) group work (1) 	6	Allow mix and match. Must be an advantage to the staff
9b	2 from, 2 marks each, 1 for identification, 2 nd for explanation eg: <ul style="list-style-type: none"> • Mix with others in the same profession (1) access to assistance from fellow members (1). • Access to technical journals (1) allows network manager to develop their expertise (1). • Take exams (1) further their knowledge (1). • Training courses (1) in specialist areas (1) • Contribute to national discussion (1) when setting new policy/regulation (1). 	4	Allow mix and match. Must be an advantage to the network manager.
9c	1 mark for type and second for use eg: <ul style="list-style-type: none"> • Operating system (1st) Use: install on computers so they will work (1). • Utilities (1st) Use: control printing/check for viruses (1). • User interface (1st) Use: logon to system/access print records (1). 	4	Not applications Use must be related to running of the network.
10	2 marks for description of development, 2 for explanation of advantage of use, eg: <ul style="list-style-type: none"> • Personalised adverts (1) targeted adverts only to dog owners on screens (1) increase likelihood of reaching target audience (1) as only those with dogs will see the advert (1). 	8	Must be related to advertising kennel.

Question	Answer	Marks	Guidance
	<ul style="list-style-type: none">• Linked advertising (1) when a holiday is purchased and it is known the owner has a dog, adverts can be shown for kennels (1) owner might not have considered kennels when booking the holiday (1) targeted advertising (1).• Use of smells in advertising (1) could have the smell of dog food with the advert (1) if shopping with the dog, could stop at the smell (1) owner likely to see advert (1).• Dynamic data websites showing availability automatically (1) from the booking database (1) less staff needed (1) and customers do not have to wait for information (1).• Emailing previous customers (1) with availability for year on dates and offers automatically (1) less staff (1) and keeps them up to date with information being pushed (1).		

OCR (Oxford Cambridge and RSA Examinations)
The Triangle Building
Shaftesbury Road
Cambridge
CB2 8EA

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

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Head office
Telephone: 01223 552552
Facsimile: 01223 552553

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