OCR
RECOGNISING ACHIEVEMENT

GCE

Information and Communication Technology

Advanced Subsidiary GCE **G061**

Information, Systems and Applications

Mark Scheme for June 2010

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Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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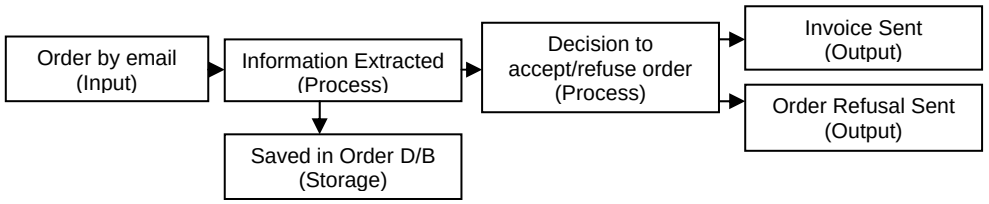
Question		Expected Answer	Mks	Additional Guidance
1	(a)	**Define the term data.** 2 from: Numbers and letters/alphanumeric characters **(1)** Without meaning **(1)** Raw facts and figures **(1)** Unprocessed **(1)**	**[2]**	There are two available marks, one mark for each statement. Allow alternative words as appropriate (eg string for numbers and letters) Do not allow examples
	(b)	**Identify two other different representation methods the company could use in the on-line training package and give an advantage of each.** 2 marks each, 1 for identification, 2nd for advantage Sound (1) able to use without looking at the screen /used for partially sighted users/increases attention (1) Video (1) allows actual representation of what you want the user to do/increases attention (1) Animation (1) increases attention/able to demonstrate requirements that are difficult to film (1)	**[4]**	Do not accept text/string/alphanumeric character or image/picture
2	(a)	**Describe the difference between static and dynamic data.** Static does not change (1) Dynamic changes (1)	**[2]**	Do not allow one changes the other does not – they must identify which one changes.
	(b)	**Give two disadvantages in using static data for the CD-ROM.** 2 from: Can be out of date (1) Price might have changed (1) CD will need to be re-created / burned again Item is not known if it is stock (1)	**[2]**	Allow examples related to company

Question		Expected Answer	Mks	Additional Guidance
3	(a)	**Draw a diagram to show the input, process, storage and output of the following stages:** • **Customer sends the company an order by email.** • **The order information is automatically extracted from the email and saved into the company's order database.** • **If the order is accepted an invoice is created and sent to the customer.** • **If the order is not accepted, a refusal letter is generated and sent to the customer.**  Two outputs listed separately (1) Two processes listed separately (1) Storage **and** Input (1) Direction of data flow (1)	**[4]**	No marks for generic i/o diagram. Do not need to include input/output/storage/processing headings in boxes

<table>
<tr><th colspan="2">Question</th><th>Expected Answer</th><th>Mks</th><th>Additional Guidance</th></tr>
<tr><td>4</td><td>(a)</td><td>Describe one advantage and one disadvantage of encoding data.
2 marks each, 2 for advantage 2 for disadvantage:
Advantage:
Less memory requirement (1) storing less information therefore less memory is required (1)
Increased security (1) If the codes are not apparent then it is difficult to know and understand the meaning of the codes (1)
Speed of input increased (1) the codes take less time to enter therefore it is quicker to input large amount of data (1)
Data Validation possible (1) since the codes follow a strict set of numbers and letters they are easy to validate (1)
Better organisation of data (1) if the data is in a standardised format then it can be compared and organised (1)
Disadvantage:
Precision coarsened (1) unlikely to encode exact data (1)
Difficult to code value judgements (1) different people have different value systems (1)
Limited codes (1) eventually all will be used up (1)
Once encoded no access to original forms (1) cannot confirm data entered (1)
User needs to know codes used (1) cannot encode data correctly (1)</td><td>[4]</td><td>Allow examples.</td></tr>
<tr><td></td><td>(b)</td><td>Identify the most suitable data type for the following fields in the order database:

<table><tr><th>Field Name</th><th>Data Type</th></tr><tr><td>Order completed?</td><td>Boolean/YesNo/TrueFalse (1)</td></tr><tr><td>Total cost of order</td><td>Real/Currency (1)</td></tr></table></td><td>[2]</td><td>Do not accept what’s possible (e.g. text (Yes) for order completed)</td></tr>
<tr><td></td><td>(c)</td><td>Define the following terms used in relational database terminology:
2 from, 2 marks for each:
Primary Key:
Unique identifier (1) for a record (1)
Foreign Key:
Used to link tables (1) allowing relationships (1)
Field in one table (1) linked to a primary key in another table (1)</td><td>[4]</td><td></td></tr>
</table>

Question		Expected Answer	Mks	Additional Guidance
	(d)	**Identify and describe two other components of a data dictionary associated with fields.** 1st for identification, 2nd for description 2 from e.g: Field length (1) the maximum number of characters allowed (1) Data Type (1) the type of data that can be entered eg integer/real (1) Key (1) whether the field is a key primary/secondary/foreign (1) Duplicates (1) whether the field can contain the same value as another field (1) Validation (1) the type of validation applied to the field (1) presence/length (1)	**[4]**	Do not allow field name. Allow examples for description. All must be related to fields.
	(e)	**Give an example of a complex query that could be used to search the customer table.** eg 2 from: Join of AND/OR/NOT (1) 2 criteria (1)	**[2]**	Must be an example. Must be related to customers Surname = Jones and Paid = No Order date = 5/5/2010 and In Stock = Yes
5		**Describe the characteristics of a customer records system.** Minimum 2 different points: Storing names and addresses of customers (1) so that orders can be posted (1) they can be contacted (1) Having a unique ID for each customer (1) so customers with the same names can be identified (1) Storing orders made by the customer (1) so a history can be built up (1) and invoices for orders can be generated (1) Storing customers payments against the customer and the invoice (1) so that they are not chased for not having paid (1) Producing customer statements (1) and customer requests for outstanding invoices (1) by producing copy invoices (1) Producing credit notes (1) linked against customer account (1)	**[6]**	Look for inputs, processing, outputs and storage for the system. They must identify two different characteristics, but are not limited to two marking points per characteristic (max 4 per characteristic). They may run them together.
6	**(i)**	**Identify a suitable type of printer the company could use to print the name badge.** Laser (1) Inkjet (1)	**[1]**	Do not accept brand names

Question				Expected Answer	Mks	Additional Guidance
6	(ii)			**Justify your choice of printer.** 2 from, examples: Speed (1) fast enough to print the quantity (1) Quality (1) good enough to identify the person/lines on bar code (1) Colour (1) to print the photo (1)	**[2]**	One mark for identification, second for why that feature is appropriate in this situation.
7	(a)			**Identify three specialist input devices for physically disabled users who do not have the use of the limbs (arms and legs.)** Three from eg: Microphone (1) Head pointer/mouse (1) Puff suck switch (1) Tongue joystick (1) Eye typer (1)	[3]	Must be physical devices not software
	(b)	(i)		**Identify two characteristics of a command line interface.** Two from: Low memory overheads (1) Typed (1) Use of switches (1)	**[2]**	
		(ii)		**Give <u>one</u> appropriate use for each of the following interfaces in the on-line training package:** 2 from, 1 for each interface, examples: Natural language Testing system (1) Disabled users (1) Forms Feedback forms (1) Entering registration information (1)	**[2]**	Allow examples of use for each

Question		Expected Answer	Mks	Additional Guidance
	(c)	**Describe three design considerations for the tailored data-entry screens for the on-line training packages.** 3 from, 2 marks each: Layout (1) logical down the page (1) Error messages (1) sound/visual (1) White space (1) not cramped (1) Expertise of users (1) use of shortcuts/explanations that can be avoided (1) Size (1) large enough to see/read (1) Style (1) clear to see (1) Colour (1) colour blindness/pre conceived ideas red/green (1)/content validation (1) preventing silly mistakes/sensible data only entered (1)	**[6]**	
8	**All employees of the company use templates. One advantage of using templates is that it makes sure that the company's house style is used.**			
	(a)	**Describe two other advantages of using templates.** 2 from, 2 marks each: Nothing is left out (1) all required information included (1) Novice users can create complex documents (1) high level skills not required (1) all users can make use of a standard format (1) Pre-made (1) can be used over and over again / re-used (1) Speed of creation (1) template creates basic document quickly (1)	**[4]**	Do not allow anything related to House Style
	(b)	**Explain why the company uses a consistent house style.** 2 from, 2 marks each: Customer recognition (1) identifiable as the brand (1) Designer has been paid (1) waste of money not to use it (1) Lack of confusion from document writers (1) know exactly what font etc to use (1)	**[4]**	
	(c)	**Describe two features of word processing software used by employees producing a user guide that would not be needed when producing standard letters.** 2 from, 2 marks each, eg: Ability to create table of contents (1) automatic links to styles (1) Use of index (1) reference page numbers and words (1) Section breaks for changing orientation/separating chapters (1) different headers and footers (1) Image manipulation tools (1) cropping/rotating images for guide (1) Autoshapes (1) use of arrows to identify areas (1)	**[4]**	Alow anything sensible not normally used in a standard letter. It may come from experience of G062 user guides.

Question		Expected Answer	Mks	Additional Guidance
9	(a)	**Describe two advantages of using a spreadsheet model to run the simulations.** 2 from, 2 marks each: Make changes/alter the model to try different scenarios (1) without having to build a new model (1) No additional cost (1) likely to already have the software (1) Staff expertise (1) likely to be able to use spreadsheet software without additional training (1) Software has been optimised for calculations (1) can produce results faster than other software (1) Can create charts / graphs from the data (1) to show trends / predictions / forecasts (1) Recalculations performed (1) so that all related fields are updated with changes (1)	**[4]**	Must refer to the relocation of the business. Allow diagram
	(b)	**Explain how variables and functions could be used in the spreadsheet model.** 2 for variables, 2 for functions. Max 1 for example for each. Variables: Identifier for values which change (1) eg number of days not trading (1) All cells could be locked except the variables (1) users cannot break the model (1) Example (max 1) Functions: Built in calculation (1) such as adding up moving costs (1) Refers to variables (1) Examples (max 1)	**[4]**	Must refer to the relocation of the business. Allow diagram
	(c)	**Give an example of the use of a range and a row in the spreadsheet used to simulate the relocation of the company.** 1 mark for an example of each e.g: Range used in function to add moving costs /used to create graph of lost orders for each day (1) Row: list of moving costs/titles for costs (1)	**[2]**	Must refer to the relocation of the business. Allow diagram

Question		Expected Answer	Mks	Additional Guidance
10	(a)	**Identify two merge fields which could be placed into the merge letter.** 2 from, eg Salutation (1) Address/Town (1) Address/County (1) Address/Postcode (1) Name/Forename (1) Name/Surname (1) Company Name (1) (where letter is being sent)	**[2]**	Allow both marks for separating the address – allow sensible use of different terms. Do not accept word fields. Only allow Address once. Only allow Name once
	(b)	**Give two advantages of using mail merge to produce the letters.** 2 from: No need to recreate data source (1) Only need to produce one master letter (1) Only need to proof read one letter (1) Faster to produce the letters (1) Can select who does and who doesn't receive a letter (1)	**[2]**	Do not accept one word answers
11		**The company is creating a website advertising its move to new premises. The website will contain bitmap images.**		
	(a)	**Identify two features of a bitmap image that make it suitable for use on a website.** 2 from: Standardisation/uniform acceptance (1) Low memory processing to display (1)	**[2]**	
	(b)	**Describe two disadvantages of using clip art images on the website.** 2 from, 2 marks each: Copyright (1) need to find who owns copyright (1) Money (1) will need to pay copyright (1) Uniqueness (1) other web sites may use same image (1) Quality (1) poor image quality (1)	**[4]**	Allow crossover of marking points

Question		Expected Answer	Mks	Additional Guidance
	(c)	**Describe two advantages of using a graphics library to find images for use on the website.** 2 from, 2 marks each: Can see a range of images (1) easier to compare which one you want (1) Low memory/processing overheads (1) each image is only a thumbnail (1) Images grouped by category (1) easier to search for required image (1)	**[4]**	
	(d)	**Describe and give an example of how each of the following could be used in the presentation:** 2 from, 3 each: Animation Entry of text onto slide (1) eg typewriter (1) Bullet points appear one at a time (1) previous ones faded (1) Example (1) Hotspots: Act as a hyperlink (1) to next slide (1) Map of the country with different regions as its own hotspot (1) linked to different slide pages (1) Example (1)	**[6]**	Any reasonable and sensible example.
12		**Identify a potential safety problem the specialist could find and for each problem give an appropriate different solution.** 2 from, 1 mark for problem, 1 mark for solution, examples: Trailing wires (1) use trunking/tape (1) Fire (1) appropriate fire extinguisher/not overloading sockets(1) Electrocution (1) not overloading sockets /no bare wires (1) Unsecured equipment (1) correct desks for equipment (1) Proximity to water (1) location of equipment (1)	**[4]**	Solutions must be different. Do not allow health answers.

Question

13 **The company has installed CCTV cameras in its offices. Many employees have expressed concern over the installation of the cameras.**
Discuss the legal and ethical implications of the installation of CCTV cameras in the offices.
It is a banded response.

9-11	4	The candidate is able to discuss clearly the impact and consequences. Candidates will show a detailed level of understanding and be able to explain in detail both the impacts **and** consequence**s** of more than one position. Logical arguments are produced to demonstrate a clear understanding of the question. Ideas will be expressed clearly and fluently using specific knowledge to support and inform the discussion. There may be a reasoned conclusion. Subject specific terminology will be used accurately and appropriately. There will be a few if any errors in spelling, punctuation and grammar.
6-8	3	The candidate is able to discuss the impact(s) and consequences(s) Candidates will show a limited understanding and be able to explain, at least one impact and associated consequence of a given position, however explanations may lack specific detail and/or concentrate on either an impact or consequence with a limited explanation of the other. Subject specific terminology will be used accurately and appropriately. There may be errors in spelling, punctuation and grammar.
3-5	2	The candidate is able to explain the impact(s) or consequences(s) Candidates will show a limited understanding and be able to explain, at least one impact or consequence of a given position, however explanations may lack specific detail. The explanation, though informed, may stray from the point but specific knowledge will be evident. Some subject specific terminology will be used. There may be errors in spelling, punctuation and grammar.
0-2	1	The candidate is able to describe superficially the impact or consequences. The information may be poorly expressed and may be in the form of a list of points. Subject specific terminology may be limited or missing. Errors in spelling and grammar may be intrusive.

Points May Cover		**Mks**
13	Impacts and consequences may include: Loss of privacy for the individual, they are being recorded all the time, concern as to who can see the footage and where it ends up – tv programmes, implication that they are doing something wrong, lack of trust between employees and employer. Legal issues – Data Protection Act and access to the footage, people requesting to see footage with employee and others in it, problem of knowing what has been recorded and able to make sensible access request. Less likelihood of crime in the workplace as monitoring takes place, feeling of security for employees, use of CCTV to back up employee statement of what happened. RIPA and monitoring.	**[11]**

Question

14 **The company is looking at producing on-line training for different subjects in schools. ICT has changed that way that lessons in class are delivered, research is conducted and assessment is completed.**
Discuss the impact of ICT on education.
It is a banded response.

9-11	4	The candidate is able to discuss clearly the impact and consequences. Candidates will show a detailed level of understanding and be able to explain in detail both the impacts **and** consequence**s** of more than one position. Logical arguments are produced to demonstrate a clear understanding of the question. Ideas will be expressed clearly and fluently using specific knowledge to support and inform the discussion. There may be a reasoned conclusion. Subject specific terminology will be used accurately and appropriately. There will be a few if any errors in spelling, punctuation and grammar.
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0-2	1	The candidate is able to describe superficially the impact or consequences. The information may be poorly expressed and may be in the form of a list of points. Subject specific terminology may be limited or missing. Errors in spelling and grammar may be intrusive.

Points May Cover		**Mks**
14	Impacts and consequences may include: Use of the internet for research – sources which are up to date and not available on printed media, plagiarism or sources, web sites doing coursework for you, use of messaging distracting you from work. Use of presentation software by the teacher, “death by powerpoint” not creating own resources – no understanding of the resources that have been created. Administration systems – grade analysis and value added.	

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