GCE

ICT

Mark Scheme for January 2011

Question		Expected Answer	Marks	Additional Guidance
1	(a)	**Give examples of three different direct sources Miss Jones could use to collect the data.** Three from, eg: Phone other companies (1) Internet sites of other companies (1) Get a quote from another company (1).	**[3]**	Other companies – 1 mark. Must be direct.
	(b)	**Using an example, show how structure, context and meaning can be added to the data collected about landscape gardening to turn it into information.** 1 mark each: Data eg 1750 (1) Structure eg nnnn (1) Context eg UK currency (1) Meaning Amount charged per hour (1).	**[4]**	Data must be given but can be inferred from the context/structure/meaning.
	(c)	**Using an example related to landscape gardening, describe the difference between information and knowledge.** 1 mark for information, 1 for knowledge, eg Information is facts – the plant is a weed (1) Knowledge is the application of the facts – weeds need to be dug up, so I need to dig that plant up (1) Information is a certainty – grass needs cutting (1) Knowledge can change – if it rains grass grows faster and needs cutting more (1).	**[2]**	Must be an example related to landscape gardening. There should be a link between the two examples showing how the information becomes knowledge.

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2		**Miss Jones is going to enter the data she has collected into a spreadsheet so that she can analyse it.**		
	(a)	**The data needs to be validated.** **What is the purpose of validation?** One from: To make sure the data is sensible (1) To make sure the data is reasonable (1) To make sure the data is in the right format (1) To make sure the data conforms to rules (1) To make sure the data is within set boundaries (1).	**[1]**	Do not accept any answers to do with correct data.
	(b)	**The data needs to be verified.** **Describe two different verification methods that Miss Jones could use.** Two marks for each method, 1 for identification, 2nd for exemplification/expansion: Manual verification/proof reading (1) where the source is read and checked against the object looking for differences (1) Computer verification/double entry (1) where the data is entered twice and difference highlighted by the computer (1).	**[4]**	Allow different terms. Allow the second mark if they have not got the first mark as long as the description is clear. The essential difference is manual v computer. Second mark for verification MUST include checking of data
3		**Having decided to go ahead with the landscaping gardening business, Miss Jones wants to produce some advertising leaflets.**		
3	(a)	**Identify two different consumable costs that will be incurred in the production of the leaflet.** Two from eg: Ink/toner (1) Paper (1) Electricity (1).	**[2]**	These must be consumable costs and must be specific.

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	(b)	**Miss Jones will need to use hardware and software to produce the leaflet.** **Using examples, describe the difference between hardware and software.** Two marks for the difference and two marks for examples eg: Examples of software include: operating system/word processor (1) Examples of hardware include monitor/keyboard/mouse (1) Difference: Hardware can be touched/physical component (1) Software programming code/instructions/programs (1).	**[4]**	Do not allow brand names for software, must be generic.
	(c)	**Miss Jones has purchased a desktop publisher and a database. Place each task from the list below under the most appropriate application she should use to complete the task.** Two correct entries, 1 mark, 4 correct entries, 2 marks: <table><tr><td>Desktop Publisher</td><td>Database</td></tr><tr><td>Create a business card</td><td>Store customer records</td></tr><tr><td>Create calendar</td><td>Create report of customers sales</td></tr></table>	**[2]**	The order of the entries does not matter.

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	(d)	(i)	**Identify an appropriate input device for creating on-screen sketches of gardens to show to the customer.** 1 from, eg: Mouse/graphics tablet/stylus (1).	**[1]**	Must be input device.
		(ii)	**Identify an appropriate input device for adding images into the leaflet.** 1 from, eg: Scanner/ (digital) camera (1).	**[1]**	Must be input device.
	(e)	(i)	**Identify <u>two</u> differences between vector and bitmap graphics.** One mark for each difference, 2 from: Vector does not pixelate on enlargement/bitmap pixelates on enlargement (1) Vector takes up less file space/Bitmap takes up more file space (1) Vector requires a lot of processing/bitmap requires low processing (1) Vector cannot be compressed/bitmap can be compressed (1) Vector is lines (1) Bitmap is squares of colour/pixels (1).	**[2]**	Pixelation must be on enlargement, and not on resize. Do NOT allow two marks for both sides.
		(ii)	**Explain why a vector image is suitable for use in the leaflet..** **Suitable** Can be enlarged to fill space on the leaflet without pixelating (1) File size of leaflet will be low as file size of image is low (1) Individual items in the image can be edited as required to fit round text (1) **Not Suitable** High processing when a change to size or layout is made (1) Lack of colour/detail/not photo in final image (1) Requires specialist graphics card/software to display correctly (1).	**[2]**	The answer can be that it is or is not suitable – the marks are given for the reasoning. Must be enlarged and not just resizing.

Question			Expected Answer	Marks	Additional Guidance
	(f)		**Some of Miss Jones' employees are physically disabled.** **Identify and describe two items of specialist software that physically disabled employees could use.** Two marks for identification, 2nd mark for each for description/exemplification eg: Screen magnifier (1) enlarges part of the screen (1) Voice activated software (1) allows the user to control the computer with sound (1) Mouse trails (1) when the mouse moves leaves a trail behind so its position can be seen (1) Sticky keys (1) prevents multiple inputs from the same key if held down too long (1) Text to speech (1) takes text from the screen and reads it aloud to the user (1) Speech to text (1) accepts voice input from the user (1)	**[4]**	Must be software – no brand names. 2nd marking point is for a description of what the software does. There may be some crossover – the candidate may not know the specific name – if it has been described and given a purpose allow 2 marks. The physical disability has not been mentioned so allow any.
4	(a)		**The data structure needs to be normalised. Describe <u>two</u> advantages of normalisation.** One mark for identification, second for exemplification/expansion eg: Reduced storage space (1) smaller hard drive required/less money spent on backup (1) Increased data integrity (1) only one copy of the data kept and is correct (1) Data consistency (1) all data is the same and can be trusted to be correct (1) Data independence (1) queries/data access not dependent on software (1).	**[4]**	Allow mix and match as appropriate of first and second marking points.
	(b)	(i)	**Four of the entities in the database will be CUSTOMER, SERVICE, JOB and JOBCARD.** **What is the degree of the relationship between CUSTOMER and JOB?** One – Many (1).	**[1]**	Correct answer only – must be right way round.

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		(ii)	**What is the degree of the relationship between SERVICE and JOBCARD?** Many – One (1).	**[1]**	Correct answer only – must be right way round.
	(c)		**Explain three advantages of creating the database by tailoring a generic database application.** Two marks per explanation, eg: Database will do exactly what is required (1) additional applications not required reducing cost (1) Beginners can create a useful database (1) do not have to understand all database concepts (1) Corporate style can be incorporated (1) makes it conform with other corporate applications/allows mental models to be transferred/location of options known (1) Interface can be simplified with most commonly used options (1) Cheaper to customise (1) than to pay for bespoke (1) Available quicker (1) than having to wait for bespoke (1).	**[6]**	Allow mix and match – second mark must be explanation – why it is an advantage. About creating not using
	(d)		**A customer form has been created to enter customer details. Using examples related to the customer form, describe three different form controls that could be used.** Any three from eg: Text box (1) To allow customer name to be typed (1) Drop down box (1) to select gender (1) Button (1) to save customer record (1) Combo box (1) to select town (1).	**[6]**	These are examples, examples must relate to a customer form. Mark can be awarded for example without identification, but do not allow multiple marks for same form control.

Question			Expected Answer	Mks	Additional Guidance
	(e)		**Describe the characteristics of a job booking system.** Characteristics - 1 for identification, up to 3 additional for exemplification eg: Input Name (1) to know who the record is about/who booked job (1) Services (1) what the company can do to a garden (1) Output Details of customer (1) based on search (1) Jobcard for employee (1) knows what needs to be done (1) Processing Check job time available (1) cannot be double booked (1) Interface Menus (1) to select files (1) Buttons (1) to go to next record (1).	**[6]**	If answer moves into orders, allow. Award max four per individual characteristic. Max three for identification of characteristic. Can award all marks in any of categories above. Up to three for lists – such as three data items stored. For full marks must have minimum of two characteristics
5			**Over time, the landscape gardening business has grown and Miss Jones wants to take over a local competitor.**		
5	(a)		**Miss Jones has been advised to use software to model the expansion of her business.** **Give two reasons why Miss Jones should use a model to predict this expansion.** Two from eg: Can make changes without altering basic model/see what will happen (1) Can present in table or graph format (1) More likely to make a profit with new business (1) Knows whether to hire more staff/bigger premises (1) Can forecast cash flow of the new business (1).	**[2]**	Allow reasons related to use of spreadsheet.

Question			Expected Answer	Mks	Additional Guidance
	(b)		**Using examples related to the landscape gardening business, describe how Miss Jones could make use of workbooks and ranges.** 2 marks for each eg: Workbooks: Hold information on different months accounts (1) one on month on a worksheet, all together in a workbook (1) Range: Add income (1) from all months (1) Select data for a graph (1) showing income over time (1).	**[4]**	Must be examples related to the gardening business. This is not a description of them but how they are to be used. Allow first mark for identification.
	(c)		**Using examples related to the landscape gardening business, describe how Miss Jones could use absolute and relative cell references.** 2 marks for each eg: Absolute: Store pay per hour (1) for each of the employees (1) Store VAT rate (1) to apply to all bills (1) Relative: Adding numbers of hours worked in a week (1) for each employee (1) Adding sales of each plant (1) for a given week (1).	**[4]**	Must be examples related to the gardening business. This is not a description of them but how they are to be used. The first mark is for a calculation using absolute/relative, the second mark is for how the calculation is used in multiple cells.
6			**Miss Jones needs to write a report for the bank about the expansion of the business.**		
6	(a)		**The data for the report comes from different applications with no common format.** **Identify the steps involved in transferring data between application A and application C without using cut/copy/paste. Application A and application C have no common format. The first and last steps have been given.**		

Question			Expected Answer	Mks	Additional Guidance
(a)			Four from, in order: **Data to be transferred is opened in Application A** Convert/export to application B readable format (1) Save file in application B readable format (1) Open application B/Open file in application B format (1) Convert/save to new file/application C readable format (1) **Data has been transferred and is opened in Application C**.	[4]	Allow alternative names for packages/applications – but not proprietary. B is a random name given to a common format between A and C.
(b)			**Identify <u>two</u> advantages of using styles in the finished report.** Two from: Allows corporate style to be used (1) Consistent presentation (1) No choices from employee (1) Different people can work on different parts of a document (1).	[2]	Not what a style is but advantage of use. Do not accept professional
(c)	(i)		**Identify <u>two</u> characteristics of wizards.** Two from: Step by step instructions (1) Based on macros/code (1) User makes choices (1).	[2]	Any two statements about a wizard, NOT examples.
	(ii)		**Give an example of how Miss Jones could make use of a macro when writing the report.** One from, eg: Apply header/footer (1) Apply house style to document (1) Set printing options (1).	[1]	Any relevant example for a document.

Question			Expected Answer	Mks	Additional Guidance
	(d)		**Describe how Miss Jones could make use of sections, frames and footnotes in the finished report.** 2 marks for each eg Section Breaking the text down/separating text (1) allowing columns of figures/pages of graphs of different formatting/orientation (1) Frames Holding specific information that is independent of the text (1) such as a graph of projected income (1) Footnote Giving additional information at the bottom of the page (1) such as references for projected income (1).	**[6]**	Allow first mark for description, second mark for how they can be used. For footnote, do not accept items related to footers
	(e)		**The report needs to fit onto one side of A4.** **Identify four different changes Miss Jones could make to the report to fit it onto one side of A4 without losing any content.** Four from, eg: (Change) font style (1) Remove font formatting/bold/italic (1) Reduce kerning/space between characters (1) Reduce font size (1) Use fit to page option (1) Reduce margins (1) (Change) orientation (1) Reduce line spacing (1) Resizing graphics (1)	**[4]**	Line spacing, margins and font size must be reduced, change is not enough.

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7			**Having expanded her business by taking over a local landscape gardening company, Miss Jones finds that the standards used in the two different ICT systems are not compatible.** **Explain the impact on the business of having two different standards.** Details can be corrupted when transferred (1) loss of business (1) Users have problems with software (1) increase in training costs (1) Documents cannot be transferred correctly (1) incorrect information recorded leading to loss of customer satisfaction (1).	**[4]**	The first mark is the problem caused by the different standards, the second is for the impact on the business. The same impact can be given for different points. Accept references to hardware
8			**Miss Jones is aware of the need to secure her ICT system.**		
	(a)		**Identify three software methods Miss Jones could use to secure her ICT system. For each method, explain how it prevents data being stolen.** Three from eg: Passwords (1) only allow authorised users (1) Firewall (1) prevent unauthorised external access (1) Anti virus (1) prevent viruses from entering system (1) Anti spyware (1) to prevent malicious code sending data out of system (1) Access rights (1) prevent access to parts of the system if not correct credentials (1) Software update (1) prevent software holes being exploited (1).	**[6]**	The first mark is for the identification of the software method – must be software and must prevent it being stolen. Not cameras/encryption/logs. Not username on its own.
	(b)	(i)	**The data in the system needs to be backed up and archived.** **Describe the difference between backing up and archiving of data.** Two from: Backing up is making a copy (1) Archive is moving the data (1).	**[2]**	Not current data, if current data and archived data is the same, eg sales records, then must indicate old records to be awarded mark.
		(ii)	**Give an example of data that should be archived.** 1 from eg: Old customer records (1) Old employees (1).	**[1]**	Allow any reasonable example. Not current data, if current data and archived data is the same, eg sales records, then must indicate old records to be awarded mark.

Question			Expected Answer	Mks	Additional Guidance
9			**Miss Jones wants to put together a presentation that can be used at her local County Show.**		
9	(a)		**Describe how the presentation could make use of sound to attract an audience.** Two from: Added to entry of text/picture (1) audience alerted to new information on slide (1) Added to slide transition (1) refocus attention on new topic (1) Background sound (1) style/theme music for business (1).	**[2]**	One mark for how sound can be used, 2nd mark for how it attracts the audience.
	(b)		**Compare the use of automatic and manual transition in the presentation for the County Show.** 	3	Two complete comparisons
2	One complete comparison
0-1	Two individual points about either side.	 Comparisons on points may be: Automatic transition is timed and the speaker needs to keep to a script and not deviate whereas with manual they can deviate from the point and answer questions changing the slide when they are ready Manual transition can be non linear allowing different pathways through the presentation whereas automatic only has one route through Automatic needs no interaction from the user whereas manual needs someone to press a button to advance it Automatic can be put high/out of the way manual needs equipment within reach	**[3]**	

Question			Expected Answer	Mks	Additional Guidance
10			**Miss Jones is concerned about health problems that she might get from working with ICT.** **Identify three health problems that Miss Jones might get from working with ICT.** **For each health problem give an appropriate different solution** Three from: DVT (1) RSI (1) Eyestrain (1) Headaches (1) Muscle/back ache (1) Carpal tunnel syndrome (1) Ulnar neuritis (1). Three from, based on answer to: DVT: 5 minute break every hour/footrest/adjustable chair (1) RSI: 5 minute break every hour/wrist rest/adjustable chair (1) Eyestrain: 5 minute break every hour/anti flicker screen/non reflective desk/diffused lighting (1) Headaches: 5 minute break every hour/anti flicker screen/non reflective desk/diffused lighting/water to drink (1) Muscle/back ache: 5 minute break every hour/adjustable chair (1) Carpal tunnel syndrome: 5 minute break every hour/adjustable chair/wrist rest/ergonomic keyboard (1) Ulnar neuritis: 5 minute break every hour/adjustable chair/wrist rest/ergonomic keyboard (1).	**[6]**	Must be health – do not allow any related to safety. Solution must be appropriate, and different. NO regular breaks, no comfortable chair.

Question			Expected Answer	Mks	Additional Guidance
11			**Miss Jones wants to make use of new developments in ICT to assist her marketing the landscape gardening business.**		
			Discuss possible future developments in ICT and their impact on marketing the landscape gardening business.		
	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** consequences 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.		
	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.		

Question	Expected Answer				Mks	Additional Guidance
11		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.		
		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.		

Areas of discussion may focus on 3D visual images and virtual walkthrough of completed gardens to show customers, increased use of marketing databases to target specific clients who match the profile, use of the internet and email through adverts and search engines to target individuals, use of video techniques for local news. The point needs to be made for Band 1.

For Band 2 the point needs to be expanded and additional information added – this can either be through the use of an explanation or consequence: she could use marketing databases that will allow her to find customers who are going to be receptive to her product and be able to afford it. This will allow her to ensure that the budget that she spends is likely to achieve results and not be wasted.

For Band 3 the initial point needs to be explained in depth – advantage of disadvantage and a consequence of that point.

For marks in Band 4 there is both a positive and a negative consequence – either of the same point or different points.

[11]

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