



**General Certificate of Secondary Education
June 2011**

ICT

3521/H

(Specification A)

Full Course Higher Tier

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

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1	(a)	Input device	Bar code scanner	1
		Reason	To input sale details automatically Input reduces the risk of human error Faster to input than keyboard Allows it to pick up/display price Any 1 mark	1
		Input device	Keyboard	1
		Reason	To input product code/sales details when bar code fails/ unreadable (in case of a problem)/no bar code When sale details/offers no longer linked to the barcode Amount of money paid by customer/cash back amount Any 1 mark	1

1	(b)	Output device	Monitor	1
		Reason	See details whilst the sale/transaction is in process See details in case of problems with the sale/transaction Any 1 mark	1
		Output device	Printer	1
		Reason	See details after the sale As a receipt in case of problems Any 1 mark	1
		Output device	Speaker	1
		Reason	Information needed by customer/employee Any 1 mark Any two devices with reasons	1

1	(c)	CD-ROM (drive) DVD ROM (drive) memory stick/pen drive/USB drive DVD Ram (drive) zip disk (drive) hard disk (drive) - allow hard drive CDR (drive) CD-RW (drive) Flash/memory card DAT tape/Magnetic tape (drive) NOT DVD/CD only Any 1 mark	1
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2	(i)	E	Correct Answer Only	1
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2	(ii)	B	Correct Answer Only	1
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2	(iii)		C	Correct Answer Only	1
3	(i)		E	Correct Answer Only	1
3	(ii)		C	Correct Answer Only	1
3	(iii)		B	Correct Answer Only	1
4	(a)	(i)	Information collected must be adequate, relevant and not excessive	CAO	1
			Information must be kept accurate and up to date	CAO	1
			MARK FIRST 2 FROM TOP OF BOX		
4	(a)	(ii)	<ul style="list-style-type: none"> • Right to see the data about themselves (their data)/be given a copy • Right to have wrong data corrected/deleted • Right to seek compensation (sue) for damage caused by inaccurate data/breaking DPA • Prevent the processing if it is likely to cause damage or distress • Prevent data being used for direct marketing • Prevent automatic decisions being made on the basis of data held • Make a request to the Data Protection commissioner if Act contravened 	Any 1 mark	1
4	(b)		They must never copy a program bought for use at work and run it at home	CAO	1
			They must never download text or images from the Internet and use them without the owner's permission	CAO	1
4	(c)		They must never gain unauthorised access to another computer's software or data	CAO	1
5	(a)		D11	Correct Answer Only	1
5	(b)		=Sum(D4:D11)	Correct Answer Only	1
5	(c)		Merging cells	Correct Answer Only	1
5	(d)		Any one cell from C4 to C11 or C16 to C18 ONE ANSWER ONLY	CAO	1

5	(e)		Faster to edit/change/alter/amend Neater/easier/edit/change/alter/amend/conditional format Changes are automatically recalculated in totals. Time saved using replicate/copy down/fill down Clearer/better presentation/layout Validation advantages More accurate/fewer errors Any 1 mark	1
5	(f)		Reduce cost/number of Check the new cost in D22 (Total cost of party) Keep going until new cost in D22 (Total cost of party) is less than or equal to £100 (< or = £100) OR Goal seek Make D22 into £100 Any 2 x 1 marks	2
6	(a)		It takes less time to enter data Less chance of entering data incorrectly It takes up less storage space Any 1 mark	1
6	(b)		14 Correct Answer Only	1
			Part (c), IGNORE 'missing letter(s),' lower case', as long it is clear	
6	(c)	(i)	RUZ0627 Correct Answer Only	1
6	(c)	(ii)	RUZ0644 Correct Answer Only	1
			In addition, IGNORE 'any separator'	
6	(c)	(iii)	RUZ0641 RUZ0642 Correct Answer Only	1
6	(d)	(i)	Range Check/length check Presence Check/'has to be there' Numeric Check/data type check Input mask Any 1 mark	1
6	(d)	(ii)	Presence Check/'has to be there' Alphabetic Check/'text' check/data type check 'drop down' list Any 1 mark	1
7	(a)		Ready now/immediately/faster than getting one made Tried and tested/ bug free Share knowledge with other users Cheaper because ... Staff may already know how to use it Range of trainers available / cheaper to get training Any 2 x 1 marks	2

7	(b)		<p>Contains the exact features need Not paying for unwanted features/only paying for things needed Tailored for purpose More efficient to run</p> <p style="text-align: right;">Any 1 mark</p>	1
8	(a)	(i)	<p>Postcode Text/Alphanumeric CAO</p> <p>Telephone number Text/Alphanumeric CAO (NOT 'numeric'/number)</p> <p>Deposit paid Currency CAO</p>	1 1 1
8	(a)	(ii)	<p>Faster data entry More accurate (data entry)/fewer errors Restrict entries/only choose what's there</p> <p style="text-align: right;">Any 1 mark</p>	1
8	(b)	(i)	<p>Holiday table/destinations/hotels/resorts/flights/airports Payment table/accounts/finance table</p> <p style="text-align: right;">Any 1 mark</p>	1
8	(b)	(ii)	<p>Avoids duplication of data/redundant data within tables Less data entry so less time/less likely to make errors Can produce report by taking fields from each of/more than one of the tables Can select (query or search) fields/take fields from each of/more than one of the tables</p> <p style="text-align: right;">Any 1 mark</p>	1

9	(a)	<pre> graph TD D1{"(Is the temperature) less than (or =) 23°C?"} --> P1[Turn ON the heater] D2{"(Is the temperature) greater than (or =) 27°C?"} --> P2[Turn OFF the heater] </pre> <p>1 mark per correct question box (either order, allow maths symbols, 'below', 'above')</p> <p>2 x 1 marks per correctly linked pair of boxes (question and process) – either order</p>	4
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9	(b)	Five minutes	Correct Answer Only	1
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10	(a)	(i)	Simulators would not place the driver in any danger Correct Answer Only	1
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10	(a)	(ii)	Less dangerous to others on the road/no crashing Cheaper than/don't have to replace/repair damage to police cars/other vehicles Can vary road conditions 'at will' Can drive a range of cars in the simulation Could practise driving in 'other towns' or 'other countries' Reports can be produced on the 'quality of driving' from each police officer More environmentally friendly/greener/uses no petrol Any 2 x 1 mark	2
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10	(b)	Places less importance on an accident as no one is really hurt/desensitises people etc. Simulations are excellent but never quite the same as the 'real thing' Car driven may not be the same as the one they will eventually drive. Any 1 mark	1
10	(c)	Spreadsheets Correct Answer Only	1
11	(a)	It is software It replicates/copies itself Correct Answer Only Correct Answer Only	1 1
11	(b)	From an e-mail/attachment/link From the Internet/download from the Internet/game/music From backing store (eg from memory stick) From another network (eg school network) Any 2 x 1 marks	2
11	(c)	Get/buy/download/install antivirus software/virus check/scan program (accept well known 'brand' name) 1 mark for mentioning it Use/run it to remove the virus 2nd mark for action of running it Any 2 x 1 marks	2
12	(a)	<ul style="list-style-type: none"> • Control/manage the overall operation/running of a computer/communicate with systems hardware • Organise/manage/supervises the programs whilst they are running • Provides start up instructions (boot up) • Handling interrupts • Share resources (between different tasks) • Reporting on errors/Error handling • Manages the system security • Dealing with passwords/security (e.g. user IDs, levels of access) • Allocation of storage/memory space. • Manages the allocation of CPU time Any 3 x 1 marks	3
12	(b)	Application software is usually written to run on a limited range of operating systems Correct answer only	1

12	(c)		<p>Any additional special feature (Appears to be) working on more than one task/program at once Any process described: 'round robin'/share CPU time, etc. Any 1 mark</p>	1
13	(a)	(i)	<p>Trailing wires Electrical faults Overload sockets/supply Virus issues Hacking issues 'Stay safe online' issues Any 1 mark</p>	1
13	(a)	(ii)	<p>Make sure all leads are secure/out of reach Repair faults/report faults/regular service checks/PAT tests Install additional sockets/RCD circuits Use anti-virus software Firewalls 'Online safety' education Any 1 mark</p>	1
13	(b)		<p>Back/Neck pain/problems Headaches Eye strain/eye problems/damage eyesight Wrist problems/Carpel Tunnel Syndrome/RSI(finger problems) Possible radiation from monitor Possible epilepsy from monitor Overheating of the room Stress Any 4 x 1 marks</p>	4

14	(a)	<p>To gain the mark, unless it is self evident, candidates must say why it is an advantage.</p> <p>Employment issues</p> <ul style="list-style-type: none"> • Creates some jobs • People work from home • People can work from “anywhere” • Can help with dangerous or repetitive jobs/use of simulators for training • Work shorter hours – so more leisure time • More flexible hours to deal with the family • Advertising jobs to a wider area (over the internet) • Automation/robotics have reduced costs • IT skills required for many jobs <p>Environmental issues</p> <ul style="list-style-type: none"> • Saves paper • Reduces carbon emission / carbon footprint • Related to employment issues – saves travel/fuel <p>Internet issues</p> <ul style="list-style-type: none"> • E-mail can be used to • Internet from hand held sets is still changing the way we access information • Research from home/revision/education • Data is more likely to be up to date • Books cost money – access to net (can be) free • Chat lines – pros • Create your own Web page/website • Find “fixes” by use of search engines/user forums • Vast amounts of information available • Rapid transfer of programs and files • Worldwide access • Insight into different cultures • Recreation/multi-player games • e-banking, e-shopping (but not just quicker) • e-commerce – qualified • lower prices for online goods/prices driven down by increased volume • Advertising on the internet to bring in more business • Social networking (Twitter/Facebook) <p style="text-align: right;">Any 5 x 1 marks</p>	5
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14	(b)	<p>To gain the mark, unless it is self evident, candidates must say why it is a disadvantage.</p> <p>Employment issues</p> <ul style="list-style-type: none"> • Causes some unemployment • Work shorter hours – less pay • Repetitive Strain Injury (RSI)/eye strain from monitors/backache from “poor chairs” • Home working – problems of separating work and leisure/never off duty • Irresponsible online disclosure <p>Environmental issues</p> <ul style="list-style-type: none"> • Dumping of old computers/hardware • Leaving computers ‘on’ 24/7/increased carbon footprint <p>Internet issues</p> <ul style="list-style-type: none"> • Not policed – so dangerous stuff out there (eg paedophile) • Can be used for “criminal” activities e.g. Football hooligans, demonstrations, riots, terrorism, racism, piracy • Censorship • Vast amount of info out there - not checked – so any old rubbish out there. • Can get hold of almost “anything” – i.e. greater access to more information to more people • People can spend too long “surfing the net” rather than more traditional pastimes - unsocial • Internet from hand held sets is still changing the way we way access information - dangers • Access/ISP can cost money • Chat lines – cons • More data held about individuals’ online use • Virus issues • Hacking issues/spyware • Private information could be displayed/including on Facebook, etc • Pornography • Cyber bullying • Identity theft/phishing/pharming/scam websites <p>Social divide</p> <ul style="list-style-type: none"> • Not having equipment to access Internet/not having Internet skills • Lack of exercise/obesity • Addiction to ... <p style="text-align: right;">Any 4 x 1 marks</p>	4
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