GCSE

ICT A

General Certificate of Secondary Education **2357/02**

Paper 1 (Higher Tier)

Mark Scheme for June 2010

Question	Answer				Mark	Additional Guidance
1 (a)	**Field**	**Data type**	**Why this type has been chosen**			Mark each box independently. Allow alphanumeric for home telephone number.
	House No.	(Text)	(Because house numbers could be a mixture of numbers or letters eg 61a)			
	Gender (M/F)	**Boolean**	• **One of only two choices**			
	Home telephone number	**Text**	• **Can use any character in the field** • **Can have leading zeros** • **Can use spaces**			
	Number of brothers/ sisters	**Integer**	• **Only whole numbers**			
					[6]	

Question		Answer	Mark	Additional Guidance

(b)		***Four from:***
		• Can sort the data
		    o On several fields at once
		    o (All data in a record is sorted) with all other data in other fields in the record
		• Can search the data
		    o (Can create and save) queries
		    o can search on more than one criterion
		• Can use multiple tables of data
		    o Can customise relationships between tables/data
		    o Key field
		• Can normalise data
		• Can use data entry forms
		• Can produce reports
		• Can define field types
			[4]	

(c)	**(i)**	(Primary) Key (field)	**[1]**	This is the only answer.
	(ii)	***One from:*** • Unique • Everyone is different • No two are the same	**[1]**	

Question	Answer	Mark	Additional Guidance

(d)	***Example Points and Expansions from:***
	 • User IDs
	    o to identify users to the system
	 • Passwords
	    o on files/folders
	    o for security
	 • Rules for setting password/example rule
	    o to make passwords more secure/difficult to guess
	 • Rules for use of passwords by user/example rule
	    o change the password regularly
	    o to protect against breach of security of password
	 • Rules for attempts at password guessing/example eg
	    o three attempts and account lockout
	    o to prevent password cracking
	 • Set access rights
	    o for security/control access to files/folders
	 • Use of firewalls
	    o to prevent access by unauthorised computers/data packets
	    o to allow access only to authorised computers/data packets
	 • Use of Virtual Private Networks
	    o to make connection invisible to others on internet
	    o to make secure connection
	 • Monitor access/use anti-spyware
	    o to detect intrusions/raise the alarm/send alerts
	 • Physical security measures
	    o to prevent (mis)use of computers within the school
	 • Advertise laws eg Computer Misuse Act
	    o imposes penalties for hacking
	
	 Accept: encryption…to make the data unintelligible to the unauthorised reader/hacker
			One mark for the method, one for what is does/how it works.
			
			 "How it works" marks must be correctly related to the method.

Question	Answer	Mark	Additional Guidance
	This question to be marked as a graded response using this grid. <table><tr><td></td><td>1 point</td><td>2 points</td><td>3 or more points</td></tr><tr><td>No expansions</td><td>1</td><td>2</td><td>3</td></tr><tr><td>1 expansion</td><td>2</td><td>3</td><td>4</td></tr><tr><td>2 expansions</td><td>3</td><td>4</td><td>5</td></tr><tr><td>3 or more expansions</td><td>4</td><td>5</td><td>6</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	**[6]**	

Question	Answer				Mark	Additional Guidance
1 (e)	**Validation Check**	**This check should be used on this field**	**This check makes sure that:**			Accept alternative wordings to the answers provided the meaning is correct.
	Presence check	(Family name)	**The field must have data in it**			Only one mark per cell/box
	Range Check	*One from:* • **Date of Birth** • **Student ID** • **Number of brothers/ sisters**	(Makes sure that the numbers being entered are within a set range)			
	Character Type check	*One from:* • **Student ID** • **Number of brothers/ sisters**	**Only numbers/ digits can be entered**		[4]	
2 (a)	*Two from:* • Use of bullet points • New line for each day/time • Use of bold/italic/underline/font effect/colour • Change the font family/type • Use of text size differences • Put in a table • Centred				[2]	

Question	Answer	Mark	Additional Guidance
(b)	**_Two from:_** • Compare poster………. • ……..with original newsletter……. • ……..to make sure there are no transcription errors • Verification/verify • Spell check • Proof read	**[2]**	
3 (a) (i)	Modem	**[1]**	This is the only answer
(ii)	**_Two from:_** • Converts • To/from analogue data • From/to digital data • Demodulate/modulate (the signals)	**[2]**	Accept references to "computers use digital..", "telephone lines use analogue…" demodulate/modulate (the signals) is worth one mark, but can award a second if there is an explanation of what this means

(b)	**_Four from:_**
	• Always on/anytime access to internet
	  o no need to actively connect
	• Central database available all the time
	• High speed connections
	  o faster downloads of files/no interruptions/won't time out
	  o faster loading of pages
	• Telephone line is left free/don't need a second line
	  o for voice/fax use
	• Email delivered from server as it arrives at server
	  o no need to request it
	• More than one computer/user can access the internet at once
		[4]	

Question	Answer	Mark	Additional Guidance

4	*Example Points and Expansions from:-*
	
	 • Do not want her to download software
	     o install unwanted applications
	     o allow virus infection
	     o pirate software/illegal file sharing
	 • Do not allow access to inappropriate materials
	     o drug-related
	     o pornographic images
	     o terrorist related
	 • Do not allow download/sharing of music files
	     o without paying/illegally
	 • Do not allow access to materials they have not checked first
	     o control reading matter
	     o religious reasons
	 • Prevent instant messaging
	     o control over contacts
	 • Do not allow access to chat rooms/social networking sites
	     o control over contacts with outsiders
	     o valid reason for controlling contacts with outsiders
	     o uploading/sharing inappropriate images of themselves
	     o no personal details revealed
	     o house/home address/telephone/location not revealed
	 • Not allowed to buy/sell goods
	     o not legally responsible
	 • Distracted from other activities
	     o anti-social/too much time spent on computer
	 • Plagiarism
	     o might copy material from the internet
		[6]	

Question	Answer	Mark	Additional Guidance
	This question to be marked as a graded response using this grid:		

	1 point	2 points	3 or more points
No expansions	1	2	3
1 expansion	2	3	4
2 expansions	3	4	5
3 or more expansions	4	5	6

Question		Answer	Mark	Additional Guidance

5	(a)	**This question to be marked as levels of response:**
		
		Level 3 (6-7 marks)
		Candidates will address all aspects of the question and discuss the advantages and disadvantages of choosing laptop computers rather than desktop computers.
		There will be a reasoned conclusion.
		The information will be relevant, clear, organised and presented in a structured and coherent format.
		Specialist terms will be used correctly and appropriately.
		
		Level 2 (3-5 marks)
		Candidates will address all aspects of the question and discuss/consider the advantages and disadvantages of choosing laptop computers rather than desktop computers.
		The discussion/consideration may be one sided or limited.
		There will be an attempt at a conclusion.
		For the most part the information will be relevant and presented in a structured and coherent format.
		Specialist terms will be used appropriately and for the most part correctly.
		
		Level 1 (0-2 marks)
		Candidates will only address the advantages or the disadvantages of choosing laptop computers rather than desktop computers.
		Answers may be simplistic with little or no relevance and may be in the form of a list.
		There will be little or no use of specialist terms.
		
		Answers may include:
		
		Size
		• Laptops are smaller than desktops
		        o do not take up as much desk space
		        o do not intrude when in customers home
				This is to be marked as a level of response question.
				
				Note the QWC is not assessed in this QP.

Question	Answer	Mark	Additional Guidance

	Weight
	 • Laptops are lighter in weight/weigh less than desktops
	     o can be easily transported to customer homes
	     o can be used in customer homes without intrusion
	     o can change designs when in customer home
	
	 Specifications
	 • Graphics cards are less powerful in laptops
	     o may not run CAD software fully
	 • CPU less powerful in laptop
	     o laptop may run slower
	 • Secondary storage smaller in laptops
	     o may not store all the applications/data/files needed
	 • Main memory smaller in laptops
	     o applications eg CAD may run slower/not run at all
	 • Screen size smaller in laptops
	     o may be difficult for customers to see designs in full
	 • Screen resolution less in laptops
	     o cannot fit as much on screen/details lost
	
	 Others
	 • Laptops do not need a permanent connection to mains electricity
	     o can be moved around/portable/used away from office
	     o batteries have limited life/use time
	     o laptop will need charging/connection to power supply
	     o spare battery bulky/heavy/expensive
	 • Mobile internet connection needed on laptops
	     o expensive
	     o unreliable when mobile/in customer homes
		[7]	

Question		Answer	Mark	Additional Guidance
(b)		*Three from:* • One (or more) input parameters • Appropriate data • A simulation (of real life) • Use of formulas (to perform calculations) • Used to make predictions/carry out "what if"… o description of "what if" eg change data/variables/see what happens	**[3]**	

(c)	**(i)**
	(ii)
		Eight from:
		(i)(ii) Uses:
		• Website for advertising
		• Online/selling direct to customers
		• Email for communications
		• Video conferencing
		• ftp for (large) file transfer/transfer of designs
		• On-line banking/financial dealings/payments
		• Research (into competition)
		• Description of need to keep data secure
		• Data must be securely transferred
		    o Use of encryption
		• Data must be securely stored
		    o Use of secure website/servers
		    o Use of passwords/user IDs
		    o Could lose data if infected by virus/malware
		    o Backup in case of data loss
		• Unauthorized access must be prevented
		    o Use of anti-virus/anti-malware e.g. to prevent keylogging.
		    o Use of a firewall to control access
		Employee issues
		• May use for personal use
		• May use chat rooms/social sites in work time
		• May use/view inappropriate sites eg on-line gambling
		Marks may be awarded anywhere across questions (c)(i)(ii) to max 8.
			[8]	

Question	Answer	Mark	Additional Guidance
6	*Three from:* • Main memory has faster access so programs/software is run there • Main memory is temporary storage/volatile and loses data when the power is turned off/secondary storage does not lose data when power is off/non-volatile • Main memory/RAM is more expensive than secondary storage for same size • Secondary storage used for long term storage of data • Secondary storage is much larger than main memory so holds more applications/data/files ***Max 2 marks if only main memory OR secondary storage considered.***	**[3]**	
	Total marks:	**[60]**	

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

14 – 19 Qualifications (General)
Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance
programme your call may be recorded or monitored