UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

MARK SCHEME for the May/June 2011 question paper for the guidance of teachers

9691 COMPUTING

9691/13

Paper 1 (Written Paper), maximum raw mark 75

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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Page 2		Mark Scheme: Teachers' version	Syllabus	Paper
		GCE AS/A LEVEL – May/June 2011	9691	13
(a) (i)	_	A device that allows data to be sent/entered to the com	nputer	
(ii)	_	A device that will store data in the computer system (fo	or later use)	[2]
(b) - - - - - (2 p	Mag chip poin touc	board/to allow cashier to input which film or number of the netic stripe reader/to input details of loyalty card and pin reader/to input details of credit or debit card ting device/mouse to make a choice the screen to make a choice or press an onscreen buttor max 4)		[4]
(c) – –	choi Prin	een output or soft copy/to allow customer to check ticke ces are input to system tout or hard copy/to produce tickets for customer nd output/error or confirmation	ts and prices as	
(2 p	oer –,	max 4)		[4]
(d) (i)	_	Producing leaflets/flyers/brochures/posters Using frames to divide up content/editing features/ combining images and text		[2]
(ii)	_	To write letters to suppliers/customers Allows use of standard templates for documents/allows personalised letters to specific people	s mail merge to s	send [2]
	Don	't accept same point in (i) and (ii)		
(iii)	- - -	To keep accounts of the cinema/to keep records of tick sold/cumulative figures/salary details Allows calculations to be carried out on numerical data graphical representation of sales figures financial modelling automatic recalculation lookups		es [2]
				[-]
(a) – – – – – –	and they Ana parti	rager must provide knowledge of requirements of business as are expert in how the business works. lyst provides knowledge of what is possible icularly within confines placed by manager/e.g. budget at properly defined analyst will solve the wrong problem ager's requirements and analyst's understanding must		
(1 μ	oer –,	max 4)		[4]

2

1

	Page 3		3	Mark Scheme: Teachers' version	Syllabus	Paper
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	(b)	(i)	-	Important to analyst to ensure that there is evidence the been met or will not be paid/ruin his reputation	nat all objectives	have
		(ii)	-	Important to manager to ensure that there is evidence been met	that all objective	es have
			_	or system may prove unsatisfactory in the future.		[2]
3	(a)	- - -	Unio The	resented by a set of bits que to that character number of bits needed is equal to 1 byte/2 bytes CII/Unicode is a common set		
		(1 p	oer –,	max 2)		[2]
	(b)	- - - -	Lead Star Con	are used to store the correct binary representation of t ding zeroes included to complete required number of b ndard number of bits irrespective of size of integer cept of short and long integer dependent on sizes of in 's complement used to represent numbers	its	
		(1 p	oer –,	max 3)		[3]
	(c)	<u>-</u>		a single bit/byte or a 1/a byte of all 0s or all 1s		[2]
			Do I	not accept Y/N or True/False		
4	(a)	-	Deta	ail is added to the end of the file		[1]
	(b)	(i)	- - -	ID numbers are stored in an index in sequence This allows a (binary search) to be carried out To find the relevant ID number and a pointer to the dar possible to use multiple indexes er –, max 3) Accept a diagram	ta	[3]
		(ii)	Eith			[-]
			Or:	Add value to the endSort table		
			(1 p	er –, max 2)		[2]

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- 5 (a) (i) Contents of RAM can be altered/ROM cannot
 - RAM is usually has a greater capacity than ROM
 - Data held in ROM, after processing, can only be written to RAM
 - RAM is volatile/ROM is non-volatile

(1 per -, max 2) [2]

- (ii) The boot-strap program/operating system/system data/BIOS
 - It must be available when power is switched on/to boot up the system/so it can't be changed

[2]

- (iii) e.g. A word processor document/user data
 - User must be able to alter it

OR

- part of the software being used (application/operating system)
- the processor needs to fetch the instructions/can be replaced by another program at any time

- (b) (i) Processor works at high speed while peripherals are much slower
 - (ii) use of buffer/temporary storage area
 - Data transferred from primary memory to buffer (or vice versa)
 - When buffer full, processor can carry on with other tasks
 - Buffer is emptied to the peripheral
 - interrupt ...
 - is sent to processor...
 - When buffer empty
 - requesting more data to be sent to buffer.
 - according to priorities

$$(1 per -, max 5)$$
 [5]

6

Α	В	С	D	OUT
0	0	1	0	1
0	1	1	0	1
1	0	0	0	0
1	1	0	1	1

Mark points:

- Column C first two values
- Column C last two values
- Column D first two values
- Column D last two values
- OUT first two values

OUT last two values

[6]

Page 5	Mark Scheme: Teachers' version	Syllabus	Paper
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7 Colour:

- Bright colours to attract young children
- Combinations of colours should allow for suitable contrasts
- Use of colours should be consistent e.g. ticks should be green
- reference to colour blindness/epilepsy

Layout

- The screen content should be placed consistently so that children are concentrating on their spelling
- Details like the score should be easily visible and always in the same place
- big buttons for ease of navigation
- large characters to make it easy to read
- Layout should be consistent with other software in the set (e.g. the arithmetic one)

Content

- The words used should be of the correct difficulty for the age group
- There must be some motivational factor like building a rocket each time an answer is correct
- Content should be kept to a minimum to allow concentration on the main aspect of the software
- relevant images

- 8 (a) LAN over short distances/buildings/site // WAN geographically remote
 - LAN uses own communication medium/WAN uses third party
 - LAN more secure/WAN more open to attack

- (b) (i) Individual bits sent one after another/along single wire
 - In one direction only[2]
 - (ii) Groups of bits sent together/along multiple wires
 - in both directions, but only one at a time[2]
- (c) The bytes are sent as a block
 - The bytes are added up before transmission (ignoring the carry out of the byte)
 - The result is sent with the data and...
 - compared with the result of the same calculation carried out after transmission

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- 9 (a) Multi-user allows many users to all use one computer
 - Network links many computers to share data and resources

[2]

(b) Batch

- Jobs/data collected together before processing
- e.g. payroll
- happens at a quiet time
- does not require human interaction
- requires a JCL to control the process
- results are not time sensitive