

# GCE 2004

## *June Series*



# Mark Scheme

## Computing

### *Unit CPT2*

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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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting 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 the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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*Dr Michael Cresswell Director General*

**Computing: Unit CPT2**

The following notation is used in the mark scheme

- ; - means a single mark;
- / - means alternative word or subphrase;
- // - means alternative answer
- A – means acceptable creditworthy answer;
- R – means reject answer as not creditworthy;
- I – means ignore.

1.	(a)	(i)	(An example of) any of the HTML files;	1
		(ii)	(An example of) any of the GIF files;	1
	(b)		Anything but: .txt, .rtf, .doc, .bat, HTML and GIFs, Image(picture/ graphics) file R binary code	1
				<b>Total</b> 3
2.	(a)	(i)	<u>Copyright</u> Designs and Patents Act;	1
		(ii)	Copying / using software <u>without</u> a <u>license / consent / authority / permission</u> ;	1
	(b)	(i)	CD-ROM; DVD-ROM; CD-R; DVD-R / DVD +R; R DVD, CD, CD-RW, DVD-RW	1
		(ii)	CD-drive or DVD drive or DVD player; Speakers / headphones; Sound card; Graphics / Video card; Video <u>projector</u> ; <i>1 mark for any 2 peripherals to max No others accepted</i>	2
				<b>Total</b> 4

3.	<p>Method: batch totals / control totals ; Applied: contents of one field in each record totalled; total calculated at start of process; re-calculated/checked at end of process;</p> <p>Method: parity bits; Applied: bit set so that number of 1s is even / odd; Set at start of process; checked each time data transferred / used /processed;</p> <p>Method: (running / the use of) anti-virus software; Applied: files checked on a regular basis; viruses that are found are removed; virus checker frequently updated;</p> <p>Method: regular/frequent/automatic backup; Applied: <i>mark could carry back here if 'regular' mentioned</i> backup interval / time is set; there is a second copy of all data; restore operation frequently checked;</p> <p><i>For each of 2 methods, 1 mark for the method and 2 for explanation of application up to max</i></p>	6
		<b>Total 6</b>
4.	<p>(a) (i) a common attribute(field); links two /related tables; // primary and foreign keys; create a link; <i>1 mark per point to max</i></p> <p>(ii) property / characteristic of an entity; one piece of information about an entity / item;</p> <p>(b) (i) to check that data is reasonable/ appropriate; to check that the data entered meets requirements; to reduce the chance of incorrect data being entered;</p> <p>(ii) Presence check / required field check; Uniqueness check; List membership / lookup list; Range check; Format check / picture check; (data)Type check; Existence (of data item or record) check; Field length check / length check; No of fields check; R Check digit, Verification; Also accept a reasonable example; <i>Any one of the above</i></p>	1 1 1 1
		<b>Total 5</b>

5. (a) (i) *Speed*  
 - money transferred automatically from Internet account (but have to post a cheque from high street account);
- Convenience*  
 - 24 hours a day;  
 - do not have to visit bank;  
 - can access from anywhere (in the world);  
 - banking in privacy;
- Control*  
 - can access details on line at any time;  
 - spending patterns can be analysed / can download details onto own computer for own analysis;
- (italicised words not required)  
*1 mark for each of 2 advantages to max* **2**
- (ii) no overheads from buildings, etc.;  
 so can pay higher rates to customer;
- Internet banks can be accessed at any time;  
 helps customers who work when high street banks are open;
- can be done from home;  
 helpful if elderly / disabled / live far from a town;
- can be done from any computer;  
 can carry out banking operations from home and from work;
- any appropriate from (a)i that have not already been given – must be a benefit from method of operation*  
**R** promotional offers over Internet
- 1 mark for aspect and one for benefit to max* **2**
- (b) (i) one piece of personal information;  
 secret question & answer / additional code;  
**A** cookies used to recognise a regular customer;  
**R** account number / postcode etc. **1**
- (ii) encrypt data;  
 use https protocol; **A** secure net site **1**
- (c) Increase /decrease resolution *plus reason*;  
 increase the size of text / font;  
 alter the background/ foreground colour; **A** brightness / contrast  
 increase icon size; **A** image, graphic;  
**R** bigger monitor; maximise web page
- 1 mark for each of 2 changes to max* **2**
- Total 8**

6. (a) permissions given to users; **R** views, levels regarding what control they have over data in the database / what they can do with what they can see';  
**A** an example; **2**
- (b) (i) two people updating same record; **A** database at once;  
 one saves it, then second person saves it;  
 first update would be lost;  
 system could crash;  
 //  
 Duplicate data entry;  
 means wasted space;  
*1 mark for each of 2 points to max* **2**
- (ii) message to second person that another person is using that record;  
 do they want to save their changes or not;  
  
 restrict write access to one / two / a few people; **R** some others would have to hand their data to those few;  
  
 when one user has accessed record;  
 only allow second user read access / **A** lock the record;  
  
 make the name field the primary key;  
 so there are no duplicates;  
  
 open database for exclusive access only;;  
  
*1 mark for each of 2 points to max* **2**
- (c) (Region = "East Midlands" OR Region = "West Midlands") AND Population > 200000  
  
 1 for correct brackets, 1 for OR 1 for 'AND Population > 200000' **3**
- (d) ability to do searches based on >1 criteria; **A** complex searches / QBE  
 ability to save frequently used searches (queries);  
 can use relationships to eliminate data redundancy;  
 easier to produce more sophisticated reports; **1**
- (e) (i) space saved as shorter items would be stored in shorter fields; **1**
- (ii) space required for field and record delimiters / field and record lengths / number of fields and field lengths; **1**
- Total 12**

7. (a) (i) pathname, page number, date, time  
 A filename, directory name as alternatives to pathname  
*1 mark for up to 3 fields to max* **3**
- (ii) wrapped;  
 A tight **1**
- (iii) left justified / not justified; incorrect alignment; **1**
- (b) (i) A: - the drive on which it is stored / that it is stored on a floppy disc;  
 Compass - the folder / directory in which it is stored;  
 Bearings - the actual filename of the document;  
 Doc - what application produced this file / program it should be opened with;  
 A file type, word document **4**
- Total 9**
8. (a) Passport Office; place of birth;  
 Store card; bank sort code / account number / amount owed;  
 DHSS; credits / allowances / age of children;  
 NHS / Doctor; injections given / certain illnesses / blood group;  
 Employer; salary / tax code / hours worked / ...;  
 Any reasonable – note ‘typical, law abiding citizen’.  
 R name, address, telephone number, date of birth  
 R Government, Bank or Building Society  
*1 for organisation and 1 for a specific item (or type of item) of data held to max.* **6**
- (b) Date Protection Act;  
 content – accurate and up-to-date;  
 // data should be adequate, relevant and not excessive (to the purpose for which it is held);  
 A one significant word  
 access – disclosed only to those people described at registration (the data user) / data controller;  
 // accessible to the individual concerned / data subject;  
 I if data subject gives permission **3**
- Total 9**

9. (a) (i) allocate hardware resources;  
between applications / processes requiring them;  
to ensure efficient use / no hold-ups / to maximise throughput;  
to report hardware malfunctions;  
*1 mark per point to max* 2
- (ii) Processor(s) / CPU(s);  
Memory / IAS / Main memory;  
Disk (space) / backing store;  
A Hard disk / drive //floppy disk (drive) //secondary storage;  
I/O devices //peripherals R examples  
File space; A files R data  
R programs  
*1 mark per resource to max* 2
- (b) ‘provide a virtual machine’;;  
//  
hide the complexities of the machine;  
from the user;  
//  
provide an interface;  
between the user and the computer; 2
- (c) controls access by multiple users to / share network resources such as  
(shared files / applications / databases / printers.)  
/ manage more than one user using an application concurrently ;  
  
manage printing from more than one computer on the network;  
manage security with more than one work station;  
establish / maintain communication between the work station and the server  
/ between two workstations; R connections  
*1 mark per point to max* 2
- Total 8**

**END OF CPT2 MARK SCHEME**