

GCE 2005

January Series



Mark Scheme

Computing Specification

CPT2 Principles of Hardware, Software and Applications

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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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) | Optical mark reader;
A OMR
R Optical Mark Recognition | 1 |
| | (b) | Touch screen;
A mouse pad | 1 |
| | (c) | Graphics tablet;
R virtual/optical pen, scanner | 1 |
| Total | | | 3 |
| | | | |
| 2. | (a) | Data held on more than one file; R >1 table
Amended in one file but not another; | 2 |
| | (b) | Only one copy of data held / no unnecessary duplication;
Referential integrity;
Database software ensures that all copies of data updated before access is allowed again;
Database controls data access;
Mechanism for linking related tables / records; | 2 |
| <i>1 mark for up to 2 points to max 2</i>
<i>NB correct terminology must be used</i> | | | |
| Total | | | 4 |

3.

<i>No arms</i>	<i>/legs</i>	
Can drive car (using feet)	(hands);	
Car modified so that...		
..all controls hand operated	..foot pedals / pressure pads;	
<i>No legs</i>		
Can control kettle / TV / answer phone / other;		
Using remote / wireless / infra-red / spoken controls;		
<i>No arms</i>		
Can control kettle / TV / answer phone / other;		
Using remote control worked by mouth / foot /spoken;		
<i>No legs</i>		
Can control computerised wheelchair;		
By joystick / sensors		
<i>No legs</i>		
Can move about with prosthetic limbs;		
Using sensors/feedback/microprocessor connected to nerve endings/muscles;		
<i>No arms</i>		
Can access / use computer (applications A specific applications);		
Using speech input /mouse pad with (bare) feet/ pointer held in mouth ;		
<i>No legs</i>		
Can shop / bank / work from home;		
Using Internet shopping / banking / telecommunications / e-mail;		
A Suitable other suggestions		
<i>For each of two different suggestions</i>		
<i>1 for what and 1 for how computer / microprocessor helps to max 4</i>		4
4. (a) Bar code;		1
Inexpensive to produce		
/ Bar code readers inexpensive		
/ Can be read up-side down		
/ Can be read by user if reader fails;		1
A Optical character;		
Can be read by user if reader fails;		
(b) Location of post box;		1
From plate in box;		1
Time of collection;		1
Set in reader;		1
A postman id;		
Pre -set in reader		
(c) Microwave/radio transmission or signals/satellite;		1
A Wireless communication/technology		

Total 7

5. Rules for slide presentation

Only a few points per slide / not too detailed;
 Suitable choice of colour of text and background;
 Consistency of design between slides / not too many different fonts;
 Keep it varied / use images / graphics / animation;
 But not too many gimmicks / keep it simple / appropriate font;
1 mark for up to 3 points to max 3

Total 3

6. (a) To support programs / processes which are non-sequential in nature;
 To deal with a number of events which happen in parallel;
 To deal with events at unpredictable moments in time;
 To carry out processing and produce a response within a specified interval of time;
 To produce output fast enough to effect next input;

1 mark per requirement to max 3

3

- (b) Process control system
 Booking system;
 Expert system;
 A specific example of a type of system

1 type of real time computing systems

1

Total 4

7. (a)

Typical Capacity	
<2 Mb	Floppy disk
250 Mb	Zip disk
600 – 700 Mb	CDR
17 Gb	DVD

1 correct 1
 2 correct 2
 4 correct 3

3

(b)

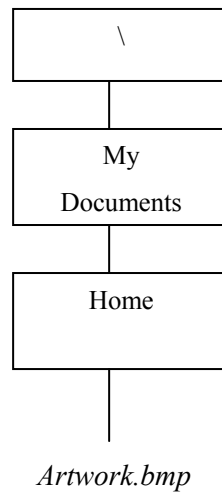
Used for:	Storage Media
Distributing commercial software	CD/R
Storage in digital cameras	Flash memory
Regular system backups	DAT tape
Exchanging small files	Floppy disk

1 correct 1
 2 correct 2
 4 correct 3

3

Total 6

8. (a) kilobytes / megabytes;
A Kb, Mb, KB, MB, Kbyte, Mbyte – *must be spelt correctly* 1
- (b) (i) Text file can be displayed by a text editor (on screen / VDU)
but non-text file cannot; 1
//A text file contains only coded characters organised on a line by line basis;
// A text file contains only characters, a non text file contains sounds, images etc.;
Areadable,non readable characters;
- (ii) fractal.pas/homepage.htm; 1
- (iii) bolero.wav/sunrise.jpg/The boys.bmp; 1
- (c) (i) \My Documents\Home\artwork.bmp A /,,C:\ 1
- (ii)



A directory tree;;
1 mark for root directory,. 1 for rest to max 2 2

Total 7

9. *Data is backed up:*
So that if lost or corrupted; 1
It can be restored;
// to protect against data loss; 1

Data is archived:
If it is no longer used regularly/not to be used regularly in the future;
It may be required later;
To save disk space/to eliminate ‘clutter’ on hard drive;
One mark for each of 2 points to max 2 2

Total 4

10. (a) (i)	Reference to G2 not made <u>absolute</u> ; A implication if (ii) shows they understand	1
(ii)	=G\$2*F4 \ =G\$2*F4; I=SUM(...), G\$ = ... ,\100	1
(b)	Vertical lookup;; / Nested IF statement;; / Array functions;;	2
(c)	Multiple worksheets (in one workbook); BOD spreadsheets / Can reference other worksheets / workbooks / Copy sheet / use of Templates;	1
(d) (i)	Good calculation facilities / calculations easier; (Library of) functions / functions easy to implement / replication of formulae; Ability to produce charts and graphs easily;	1
(ii)	Can produce reports; Can organise data in related tables; Ease of extracting data under different / more than one criteria; Frequently used queries can be saved; R Data can be validated	1
	Total	7
11. (a)	Spending power; Purchasing habits / have pets / have small baby / other similar; Daily / weekly movements / 'always shops on a Friday'; <i>1 mark for up to two points to max 2</i>	2
(b)	Customers' names and addresses could be sold on /Info could be sold on ; Store could use information gathered to try to sell other unsolicited services to customer; Targeting customers with appropriate offers (leads to more sales)/sending (implies targeting, using address information) advertisements; <i>1 mark for up to two points to max 2</i>	2
(c)	<i>Emphasis is on gathering information.</i> Register what data is being gathered for; Collect only information that is truly needed/relevant; Gathered openly & lawfully/ Gathered fairly & lawfully; Data gathered must be accurate; A public have right to view and correct <i>1 mark for up to two points to max 2</i>	2
	Total	6

12.	(a)	Serial; Each new record added on to end of file; Simplest – order not needed;	1 1
	(b)	Sequential; Can then be processed against first file (Swantags) in one pass;	1 1
	(c)	Open retrievals, open new retrievals; Copy original file; To position of new record; Add new record; Copy to end of file; Close old and new retrievals; Archive old retrievals / re-name new retrievals; A Delete <i>1 mark for up to 4 statements in order to max 4</i> <i>Penalise once if prose, not algorithm</i>	 4
	(d)	Random access A IS, Direct Access; Can go straight to individual record; Hit rate small;	1 1
			Total 10

END OF CPT2 MARK SCHEME