GCSE

Information & Communication Technology B

Mark Schemes for the Units

June 2006

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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Any enquiries about publications should be addressed to:

OCR Publications
PO Box 5050
Annersley
NOTTINGHAM
NG15 0DL

Telephone: 0870 870 6622
Facsimile: 0870 870 6621
E-mail: publications@ocr.org.uk

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MARK SCHEME FOR THE UNITS

Mark Scheme 2380/01
June 2006

No half marks.

No credit for named software, unless qualified.

No marks for 'quicker', 'easier', 'cheaper', 'more efficient' unless further explanation relevant to the question is given.

Each line on the mark scheme below is worth one mark unless clearly shown otherwise. Items separated by / are alternatives. Items in brackets are not compulsory for the mark.

1	1 mark will be awarded for each correct answer. Maximum number of ticks is 9, deduct one mark for each additional tick.	

Device	Input	Output	Storage
Mouse	✓		
DVD			✓
Printer		✓	
Hard disk			✓
Hand-held scanner	✓		
Flat screen monitor		✓	
Plotter		✓	
Digital camera	✓		
Concept Keyboard	✓		

9

2	1 mark for each of the following:	

- Quicker (needs qualifying)
- healthier/more hygienic
- easy to clean
- use with gloves
- easier (with qualification)

Must be an advantage, not a feature

Needs to relate to the Health Centre

3

3a	4	**1**

3b	6	**1**

3c	One mark for each correct answer maximum three marks e.g.	

- codes are quicker to key in
- less storage space required
- easy to validate
- less space on paper
- easy to read
- because everyone knows what M & F stand for

3

3d	One mark for reference field.	**1**

3e	One mark for 7 or 8	**1**

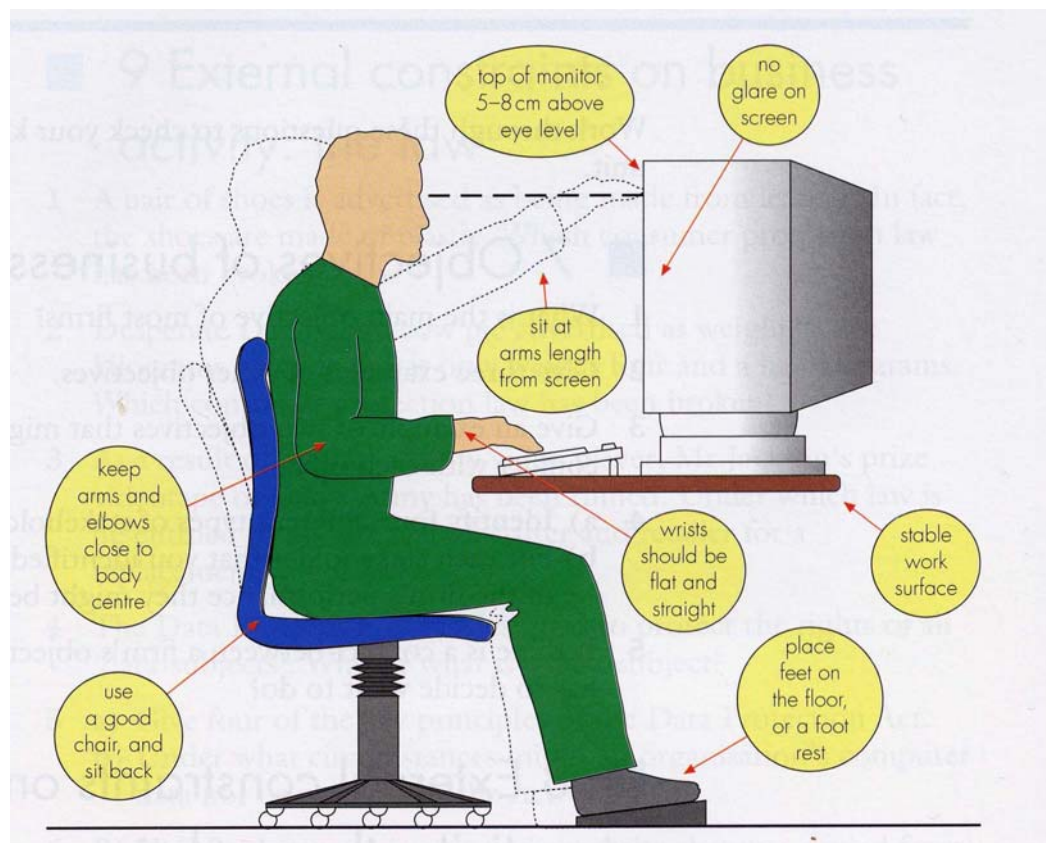| 4 | 1 mark for each correctly identified aspect or sketch of additional component plus 1 mark for expansion e.g.
• armrest
• wrist rest
• diffused lighting
• good chair
• sit back in chair
• adjustable chair
• sufficient desk space/ workspace

Some components are shown below, others include
• radiation
• need to take breaks
• have eye tests
• 5 wheels on chair
• trailing cables

up to 4 marks plus one mark for each expansion up to 4 marks

eg A wrist rest (1 mark) will reduce wrist strain (1 mark)

Extra mark for expansions hence 4 points and four expansions = 8 marks
8 points without expansions would also give 8 marks. | 8 |

5a	1 mark for a valid point and an additional mark for stating it is a program. • replicates itself • destroys data • corrupts data • can be transferred by email • can be transferred by network • can be transferred by disk • causes computer not to function properly	**2**
5b	1 mark for each correct way up to 2 • use a virus checker • don't use un-trusted disks • don't open unexpected emails • don't open files/download from unknown sources • do not open untrusted emails • regularly scan PC/hard drive	**2**
6a	Hacker	**1**
6b	1 mark for each valid way, that uses correct terminology, up to a maximum of 2 marks. Sample answers: • by fire or floods, • by accidental deletion • by faulty equipment • by interference during communication • by software problems such as crashes • by power surges/power loss • by being unintentionally written over/not saved • for malicious reasons such as fraud/hacking • by being updated with incorrect data • by a virus	**2**
6c	1 mark for each valid method, that uses correct terminology with 1 mark for a description, up to a maximum of 2 marks for each method with description. Sample answers: • back up data on a regular basis • use virus checking software to remove viruses • add a firewall to protect from unauthorised access • use a surge protector to prevent power surges/ regulators are used to ensure continuous steady flow of power • passwords are used to ensure that only authorised people have access to data; • backup generators in cases of power loss • standby systems can operate when necessary candidates may refer to answers given in 6b, providing their answer mitigates against the issues raised and marks should be given	**4**

7	One mark for each correct answer e.g. Advantages: • quicker to access information you want; • can contain video and sound files; • usually has search facilities. • will be more up-to-date • more data available • shared access Disadvantages: • you need a computer • you need to know how to use the system; • some religious beliefs do not allow the use of computers • you need access to the Internet. • Less portable • Can be inaccurate	3
8a	1 mark for an advantage e.g. • you could go into other doctors when on holiday and • get repeat prescriptions • if you go into hospital they would have your medical records • easy to transfer records when you move • less likely that records could get lost • more efficient/ correct treatment for patient • easy, instant access between hospitals and GP's	1
8b	1 mark for any of the following: • more accurate data available on patient • more easily accessible • shared workloads (e.g.Locum) • easier to update/transfer data • easier to consult with other doctors • more likely to be able to read the notes than handwriting • secure	1
8c	One mark for each point: A LAN is normally within one room or building (1 mark) while a WAN is spread over long distances (e.g. Internet) (1 mark).	2

9a	1 mark for each of the following advantages to a maximum of 3 • record of contact • 24 / 7 access (to send/receive) • can contact a number of patients at one time • can add links to website pages • can add attachments • Cost implications(with expansion) (1 Mark only) Disadvantages 1 mark for 1 of the following: • Viruses can be transmitted by e-mail. • E-mail addresses can be confusing, and you do not always know to whom you send an e-mail or from whom you receive one, because of the address. • E-mail can be read by other people, which causes security problems. • The patients may not have a computer or access.	
		4
9b	1 mark for each correct device e.g. • computer, • modem, • cable, • telephone line • router • cable TV box	
		3
10	1 mark for each correct way e.g. • Wage slips – printing /design • Any calculation • Mail merge • BACS • Data storage of hours worked etc	
		3
		55

Mark Scheme 2380/02
June 2006

No half marks.

No credit for named software, unless qualified.

No marks for 'quicker', 'easier', 'cheaper', 'more efficient' unless further explanation relevant to the question is given.

Each line on the mark scheme below is worth one mark unless clearly shown otherwise. Items separated by / are alternatives. Items in brackets are not compulsory for the mark.

1	One mark for each correct answer. No marks for brand names. **Task** **Type of software** to access a health centre website Web browser / mobile phone software Search engine to write a letter Word processor to calculate the cost of medicines Spreadsheet/ calculator to send an electronic message Email to analyse data from a questionnaire Spreadsheet or database	5
2a	One mark correct answer providing the use is stated e.g. • to input patients details • to type in data for a search	1
2b	(i) One mark: any correct "sensor" but must be named OCR OMR	1
	(ii) One mark correct answer providing the use is stated e.g. • to monitor heartbeat • to monitor temperature • to monitor numbers of visitors to the health centre • to read the characters • to read pencil mark	1
2c	Candidate must indicate a reason for 1 mark (one each e.g. temporary and permanent) and a mark for explanation for each e.g. sometimes data only needs to be visible to the doctor, (1 mark) other times they require a hard copy (1 mark) example of use e.g. Monitor: • to get instant feedback • to explore effects of modelling • to view patient records Printer: • to get a hard copy • to print out a prescription • to print out patient letters	4

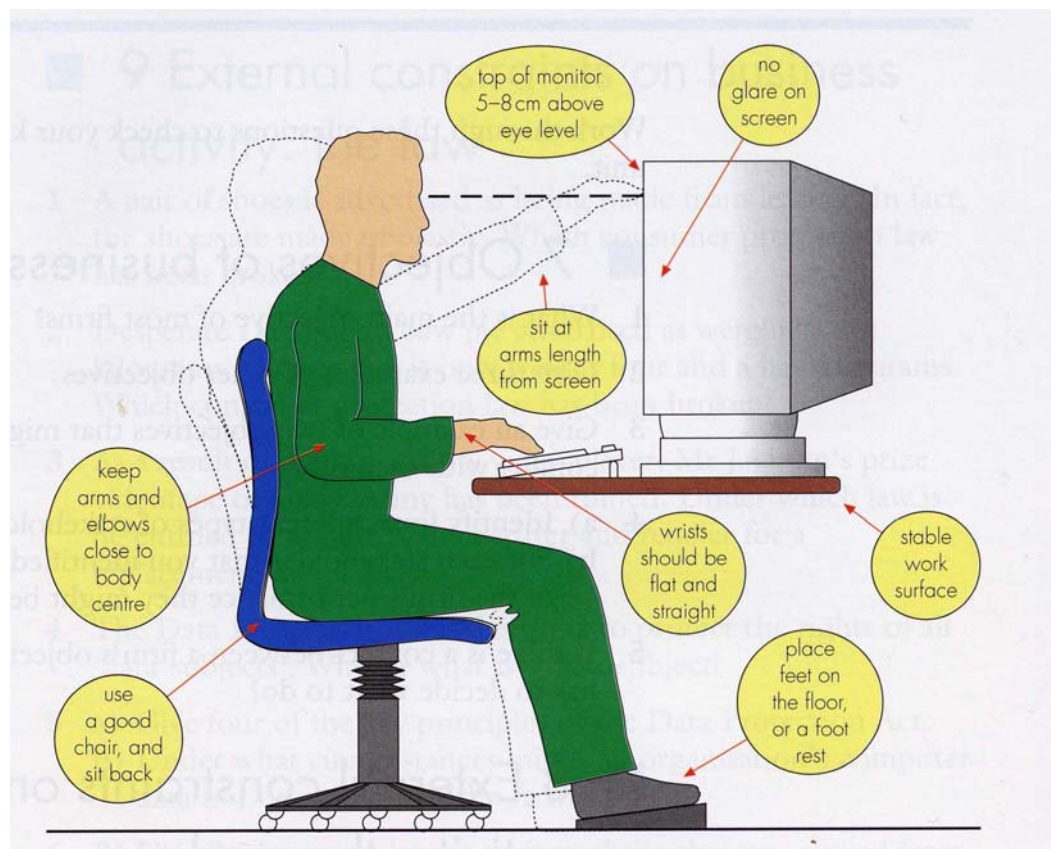| 3	1 mark for each correctly identified aspect or sketch of additional component e.g. • armrest • wrist rest • diffused lighting • good chair • sit back in chair • adjustable chair • sufficient desk space/workspace Some components are shown below, others include • radiation • need to take breaks • have eye tests • 5 wheels on chair • trailing cables up to 4 marks plus one mark for each expansion up to 4 marks eg A wrist rest (1 mark) will reduce wrist strain (1 mark) Extra mark for expansions hence 4 points and four expansions = 8 marks 8 points without expansions would also give 8 marks. 	8
4a	1 mark for each correct piece of sensitive information e.g.	3

	• Racial or ethnic origin • Religious/similar beliefs (this is to ensure food etc is not against their religious beliefs) • Health • Sexual Life • Offences • Political • Trade union • Medical history • medication	
4b	One mark for valid explanation additional mark for relating this to a health centre. **Data Protection Act** Appropriate technical and organisational measures should be taken against unauthorised access The health centre will need to provide a range of **access levels** (1 mark) to take all necessary measure to prevent **unlawful processing**, (1 mark) **accidental loss**, (1 mark) **damage or destruction**. (1 mark) The data processor at the health centre has an obligation (1 mark) to maintain security of information e.g. organisational issues, staff training, (1 mark) access to personal data. (1 mark) Data should be processed in accordance with the rights of the subject Patients can **ask what medical data is held on them** (1 mark) and can **request a copy** (1 mark) of all information held about them. Data should be accurate and up-to-date Patients medical records are always changing and if it is not up to date errors could occur in medication (1 mark). This is an ongoing requirement and means data needs to be **kept under constant review**. (1 mark) **Patient records should be checke**d (1 mark) to ensure accuracy. **Patients should be aware of their records** (1 mark) and any comments about the **accuracy of their records should be recorded**. (1 mark) Data should not be excessive Patients will have sensitive things they do not want other people to know. The information recorded will be **adequate and relevant** (1 mark) to the patient. The health centre **should not record more than is needed for medical care** (1 mark) or keep data for **longer than is needed**. (1 mark) Data should only be obtained for the stated purpose Information will be used **solely for planning and delivering health advice** (1 mark) and will not be used in a inappropriate way. Patient information **obtained for one purpose cannot** (1 mark) be used for other purposes, **without the consent of the patient**. (1 mark) Can give D marks for expansions over all questions.	**10**
5a	One mark for each correct point or example one for digital one for analogue one for explanation. E.g.	**4**

		• an electronic signal is **digital** if data in it is represented as electrical 'on' and 'off' • blood pressure is analogue; it is sampled using digital data (up in steps) Give marks for charts • signals that correspond to binary digits and • can be stored in computer memory • **analogue** data is represented as signals that vary • within a predefined range • traditional watch faces are analogue	**3**
5b	One mark for each valid point or example e.g. • A **digital** system only needs to sense the difference between clearly distinguishable states • For example, a slight fluctuation in electrical voltage would affect the result in an analogue computer • More accurate to read but would not affect a digital computer because it could still easily distinguish the 1 state from the 0 state of any circuit element • For the same reason digital music reproduction (as on a compact disk) is more accurate than analogue reproduction • quicker		**3**
6	One mark for each correct answer e.g. Advantages: • Quicker to access information you want • can contain video and sound files • usually has search facilities • Will be more up-to-date • More data • Shared access Disadvantages: • you need a computer • you need to know how to use the system • some religious beliefs do not allow the use of computers • you need access to the Internet • less portable • can be inaccurate		**3**

7a	1 mark for an advantage e.g. • you could go into other doctors when on holiday • get repeat prescriptions • if you go into hospital they would have your medical records • easy to transfer records when you move • less likely that records could get lost • more efficient/correct treatment for patients • easy, instant access between hospitals and GP's	1
7b	1 mark for an advantage e.g • more accurate data on patient • more easily accessible • shared workloads (eg locum) • easier to consult with other Doctors • easier to update/transfer data • easier to make contact • More likely to be able to read the notes than handwriting • secure	1
7c	One mark for each point: A LAN is normally within one room or building (1 mark) while a WAN is spread over long distances (e.g. Internet) (1 mark). Communication differences	2

8	1 mark for each issue identified (up to 3 marks) one mark for each explanation.	
	• security - staff would need to have **passwords** (1 mark) and **different access levels** to **ensure security** (1 mark) • **staff training** (1 mark) - staff would need to be **trained** in the **use of new equipment** in **order to use it effectively**. (1 mark) • change in job role (1 mark) • Working environment/healthy and safety (1 mark) • Redundancies (1 mark) • Productivity • Transfer of manual data • ICT expertise	**6**

9	**One mark for each correct point additional mark for expansion.** If candidates gain more than two marks in a single box but fail to complete all the boxes 2 marks can be given as discretionary marks.	

Job Title	Software	Task	How Task is done
Doctor	Control / monitoring software	Monitor heart beat	**Pressure sensor (1 mark)is fixed to a patient's arm (1 mark)**or **Digital Numeric (1 mark)**or **automatically records on computer (1 mark)**
Nurse	Database	To record a barcode serial number from a medicine bottle	**Scanner / bar code reader (1 mark)**scans the bar code / database **(1 mark)** Numeric **(1 mark)**
Receptionist	Database	Books patient's appointments	Receptionist **checks on screen f(1 mark)**or doctor availability and **types in appointment (1 mark)** Alpha Numeric **(1 mark)**
Receptionist	Word processor	Types letters to/send to all patients due for a check up.	**Receptionist types** on keyboard **(1 mark)** / in template **(1 mark)**/ and prints **(1 mark)**/mail merge **(1 mark)**appropriate letter Alpha Numeric

The value **8** appears at the bottom right of question 9's marks column.

10a	1 mark for each reason to a maximum of 2 • automatic calculations • able to plot graphs • able to add validation checks • able to link data • ability to round off results • easier to create columns of figures • easy to copy / replicate formulas • ability to merge cells • easy to update • quick to recalculate • sortable	**2**
10b	2 marks for correct answer that must explain how all collected data needs to be equated to a number in order to analyse it electronically or produce charts e.g. easy to summarise / categorise (1 mark) e.g. Computers work digitally where something is either on or off. (1 mark) For a question to be analysed statistically, answers must be related to a number. (1 mark)	**2**
10c	1 mark up to a maximum of 2 marks one for each valid point, Q2 and Q3 e.g. • patients want more computers • patients less pleased with courtesy of receptionist • patients pleased with the courtesy of receptionist • more use of ICT needed 1 additional mark for linking point back to specific numbers on spreadsheet (up to 2 marks)	**4**

10d	1 mark for each valid question 1 for answers. The question must elicit a specific number or specific response, this can be achieved by, for example:
	• a selection from a pre-defined list
	  – what types of information would you like the health service to provide electronically,
	  – would you like to book electronically?
	  – Do you have IT equipment at home?
	Or
		2

	• By asking them to rate a service eg – A score – 10 = good, 1 = poor	

11a	Key elements must include:
	• **structure** (1 mark)
	     – Design of leaflet (folds etc)
	• **Layout** (1 mark for each key element up to a maximum of 3)
	     – 1 mark for use of graphics
	     – 1 mark for use of more than one font size
	     – 1 mark for appropriateness for target audience
	
	If no leaflet is evident only content marks can be given.
	
	• **Content** (1 mark for each key element up to a maximum of 3)
	     – Open application (existing)
	     – Open application (new)
	     – Save files
	     – Load application
	     – What the application is
	     – how to open an application
	     – switching on the machine
	     – opening an application
	1 mark for clear instructions
		8

11b	1 mark for DTP or graphics package or word processing	**1**
		80

General Certificate of Secondary Education
Subject 1095/1995
June 2006 Assessment Series

Unit Threshold Marks

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
2377F	Raw	40	-	-	-	37	33	29	26	23	0
	UMS	55	-	-	-	48	40	32	24	16	0
2377H	Raw	40	38	34	30	27	23	-	-	-	0
	UMS	80	-	64	56	48	40	-	-	-	0
2378	Raw	64	60	51	42	34	28	23	18	13	0
	UMS	120	-	96	84	72	60	48	36	24	0
2379	Raw	64	60	51	42	34	28	23	18	13	0
	UMS	120	-	96	84	72	60	48	36	24	0
2380F	Raw	55	-	-	-	35	29	23	18	13	0
	UMS	55	-	-	-	48	40	32	24	16	0
2380H	Raw	80	54	47	40	33	27	24	-	-	0
	UMS	80	-	64	56	48	40	-	-	-	0

Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

	Maximum Mark	A*	A	B	C	D	E	F	G	U
1095	200	180	160	140	120	100	80	60	40	0

	Maximum Mark	A*	A	B	C	D	E	F	G	U
1995	400	360	320	280	240	200	160	120	80	0

The cumulative percentage of candidates awarded each grade was as follows:

	A*	A	B	C	D	E	F	G	U	Total No. of Cands
1095	3.1	14.6	34.5	53.9	67.7	79.4	89.1	96.3	100	9414
1995	3.1	15.7	38.5	63.0	78.2	88.2	95.1	98.4	100	14175

23589 candidates were entered for aggregation this series

For a description of how UMS marks are calculated see;
www.ocr.org.uk/OCR/WebSite/docroot/understand/ums.jsp

Statistics are correct at the time of publication