UNIVERSITY *of* CAMBRIDGE
International Examinations

2007

INTERNATIONAL GCSE

MARKING SCHEME
MAXIMUM MARK: 120
SYLLABUS/COMPONENT: 0418/01 Information Technology SPECIMEN PAPER

Question Number	Answer	Part mark
1	A Touchpad B Trackerball C Mouse D Keyboard E Bar code reader	1 1 1 1 1
2	False True False False False	1 1 1 1 1
3	**three** from Windows Icons Menus Pointers	3
4	CD ROM Floppy Disc	1 1
5	Bar code Magnetic stripe Magnetic tape Laser printer	1 1 1 1
6	Right 90 Forward 50 Right 90 Penup Forward 10 Pendown Forward 60 Penup Forward 10 Pendown Forward 30 Right 90 Forward 50 Right 90 Forward 60 5 marks - 1 mark for each group of 3 statements	5

7 (a)	1 RAM
	      two from:
	      Random access memory
	      Volatile memory / lost when power is lost
	      Can be changed / can be written to and read from
	
	2 ROM
	      two from:
	      Read only memory
	      Permanent memory / is not lost when power is lost
	      Cannot be changed / can only be read from
		2
		
		2

7(b)	**one** from: used to hold data currently in use used to hold programs currently in use	**1**
8(a)	**two** from: can store more data than the memory stick cheaper to replace (not just 'cheaper' on its own) not so easy to lose	**2**
8(b)	**two** from: more compact / easier to carry faster access to data faster data transfer more robust / difficult to damage	**2**
9(a)	Dot matrix printer	**1**
9(b)	Graph plotter	**1**
9(c)	Laser printer	**1**
10(a)	**three** from: a network of computers / LAN solely within a company or organization good security for confidential information secure email communication	**3**
10(b)	**three** from: modulates and demodulates information / converts analogue to digital / digital to analogue Internet connects computers using phone lines phone system is analogue computer is digital therefore conversion is necessary	**3**
10(c)	user name / id password	**1** **1**

10(d)	1 **two** from:
	    changes data
	    so that it appears to be meaningless
	    needs a decryption key to be understood
	
	2 **two** from:
	    provides security for sensitive data
	    protects against results of unauthorised access / hacking
	    prevents data from being understood by hackers
		2
		
		2

11(a)	**one** from: faxed signed document is legally acceptable can't be hacked into it can't be affected by viruses	**1**
11(b)	**two** from: fax can be seen by anyone in the company / not confidential paper can jam in the fax machine may not be readable when it arrives receiver's fax line may be continually engaged receiver's fax may be out of paper receiver's fax may not be switched on	**2**
12(a)	7	**1**
12(b)	5	**1**
12(c)	BFK 297	**1**
12(d)	Size of engine / Price	**1**
12(e)	Text/Alphanumeric	**1**
12(f)	Registration	**1**

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13(a)	**two** from: unauthorised attempting to gain access to a computer system	2
13(b)	**two** from: a program designed to make a computer system unreliable / crash / delete data copies itself between computers / within one computer	2
13(c)	**two** from: virus checker / virus killer do not open email attachments do not use floppy discs/CDs/DVDs/memory sticks you don't know the origin of do not download files from the Internet	2
14	real time batch on line real time	1 1 1 1
15(a)	**three** from: observation questionnaires interviews collecting documents	3
15(b)	Patient number Personal data (name, address, phone no., fax no., email address, work phone number, next of kin, religion) Medical History with at least 3 lines allowed for completion Information fills the page	1 **2 marks for 4 items, 1 for 3 items else 0** 1 1
15(c)	typing in the data twice and comparing it visual verification	1 1
15(d)	**three** from: field length field/data type validation rules field name record length number of tables (in relational database) file/table names key field relationships/links to other tables	3
15(e)	**two** from: parallel running direct changeover pilot running phased implementation	2

15(f)	**parallel running/pilot running** **two** from: there is a backup/fallback system in case of malfunction time can be taken in correcting malfunctions can train staff gradually **direct changeover** **two** from: time is not wasted in changeover cheaper as you don't have to pay two sets of staff system is tested rigorously before implementation less likely to malfunction **phased implementation** **two** from: if system malfunctions only small part of business affected don't have to pay two sets of staff can make sure system works before extending it	**2**
15(g)	**two** from: to make sure user requirements have been met to identify any shortcomings to identify possible improvements	**2**
16(a)	**five** from: the payroll number/432175 is read from the transaction file each record is read from the master file the payroll number is compared until the matching record/432175 is found the number of hours/42 is read (from the transaction file) the rate per hour/17.35 is read (from the master file) these are multiplied together the tax rate/27% is read (from the master file) tax is calculated subtracted from the wage name/Jaswinder Dhillon is read (from the master file) workers details printed on payslip	**5**
16(b)	1 Length check No less than AND no more than 6 characters **OR** Range check Less than 1000000 AND greater than 99999 2 Range check Less than 100 AND greater than 0	**1** **1** **OR** **1** **1** **1** **1**
16(c)	serial access	**1**
16(d)	1 magnetic disc 2 direct access	**1** **1**
16(e)	1 name/address/phone number changes 2 new worker starts 3 worker leaves/is sacked/dies	**1** **1** **1**

17	**two** from: pressure pad detects weight of burglar light/infra red sensor detects broken beam contact sensor detects door /window opening temperature sensor detects body heat sound sensor detects any noise made by burglar	**one mark for each sensor, one mark for each use.** **Two sensors maximum** **4 max**
18	**three** from: more accurate less dangerous doesn't forget results/graphs automatically produced	3
19(a)	**two** from: car engine fault diagnosis medical diagnosis chess games	2
19(b)	**four** from: current system is observed potential users interviewed potential users given questionnaires existing documents examined user requirements decided system specification decided knowledge base designed inference engine designed design rule base designing a method of displaying the results hardware chosen knowledge base created inference engine created rule base created	4

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20	**six** from: **Bank** Advantages: maximum of **two** marks from: fewer workers needed - less wages fewer branches needed - less rental workers can be less qualified - lower wages Disadvantages: maximum of **two** marks from: customer dissatisfaction - lose business initial large expenditure on redundancies initial large expenditure on retraining **Customer** Advantages: maximum of **two** marks from: don't have to spend money on traveling to the bank don't have to spend time traveling to the bank easier to transfer money from one account to another Disadvantages: maximum of **two** marks from: hackers could hack into your account loss of personal touch cannot withdraw money	**6 max**