Mark Scheme (Results)
November 2009

IGCSE

IGCSE ICT (4385/2H)

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.

- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.

- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.

- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.

- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.

- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.

- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.

- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

• Question • Number	• Answer	• Mark
• 1(a)	•	• • (9)

•

Field name	Example data	Type	Length	Reason
~~Item.~~	~~Javelin~~	~~text~~	~~15~~	~~Example data shows letters and an item name is unlikely to be longer than 15 characters.~~
Quantity	8	number integer	2	Quantities are numbers and there are unlikely to be more than 99 of anything
Purchased	22/09/2005	date	8 10	date format shown is 8 / 10 characters (10 if / is counted)
Cost	£105.99	currency	5 6 7	currency format is 5/6/7 characters (6 if £ or . counted)(7 if £ and . counted) Single item is unlikely to be more than £1000

•
• 9 marks.   Allow other sizes if reasons support the answer
•

Question Number	Answer	Mark

1(b)	Item
	    length 1 mark
	    description 1 mark
	Quantity
	    range / length 1 mark
	    description 1 mark
	Purchased
	    range / format 1 mark
	    description 1 mark
	Cost
	
	    range / format 1 mark
	    description 1 mark
	
	The two validation checks must be different
	
	2 x 2 marks
		(4)

Question Number	Answer	Mark
2(a)	answers may include: • flash card is smaller (than dvd / hard drive). Therefore camera is smaller / lighter • flash card uses less power (than dvd / hard drive). Therefore longer battery life smaller / lighter battery • flash has no moving parts. Therefore less power needed less noise / vibration no write errors if jolted NOT flash memory is non-volatile. Maximum 4	(4)

Question Number	Answer	Mark
2(b)	answers may include: • flash card slower read write than HD • flash cards more expensive (per Gbyte) than either HD or DVD Maximum 1	(1)

Question Number	Answer	Mark
3(a)	answers may include: frequent / regular breaks. Eyestrain / eye problems, stiffness / muscle ache (away from computer) frequent / regular look Eyestrain / eye problems, (away from screen) use correct posture Stiffness / muscle ache, back pain (sitting) use correct posture RSI, pains in hands / arms (typing) correct adjustment / use RSI, stiffness / muscle ache, back / of furniture / computer arms pain, pains in hands 3 x (1+1)	(6)

Question Number	Answer	Mark
3(b)	answers may include: high humidity fatigue dehumidifier/air conditioning poor lighting eye problems anti-glare/indirect light low air quality respiratory problems air filters high noise levels hearing problems sound insulation method 3 x 1	(3)

Question Number	Answer	Mark
4(a)	Answers may include: • WAN requires telecoms link / named telecoms method, LAN does not • LAN is within limited area / single building, WAN can be over any distance Max 3	(3)

Question Number	Answer	Mark
4(b)(i)	**Large** screen / projector. For classes to see the teacher Video camera, To capture images of teacher / classes Microphone, To capture sound of teacher / classes Speakers, To hear what is being said	(6)

Question Number	Answer	Mark
4(b)(ii)	Answers may include: Drivers for video camera Drivers for projector Video capture software Video conference / Software to allow interaction between student and teacher and teacher/Skype (software) Max 2	(2)

Question Number	Answer	Mark
5	Answers may include: Malware (other than viruses) spyware, adware reads personal data / loads adverts any effect/example matching malware information out of date site may be abandoned / not maintained therefore information is not current / may conflict with other sources, suitable example too much information too many sources may cause information overload / be difficult to handle / may give differing information / opinion, suitable example Incorrect / misleading information some sites are deliberately or accidentally incorrect, suitable example 3 x 2	(6)

Question Number	Answer	Mark
6(a)(i)	Answers may include: consists of (mixture of) letters, numbers, symbols, upper and lower case, not made up of (dictionary) words 1 mark for a description 1 mark for a matching example # (2)	

Question Number	Answer	Mark
6(a)(ii)	Answers may include: • to (help) prevent unauthorised access • so that passwords cannot be (easily) guessed • so that passwords cannot be (easily) found using hacking methods / by hackers • so that people seeing password entered won't be able to memorise it Max 2 marks	(2)

Question Number	Answer	Mark
6(b)	Answers may include: • People forget their passwords easily • People may mistype passwords and get locked out / be unable to log in • People write passwords down / store on computer Max 2	(2)

Question Number	Answer	Mark
7(a)	Answers may include: • sharing of peripherals / named peripheral • central storage of data • central backup • messaging between computers • central security control • easier software installation / updates max 3	(3)

Question Number	Answer	Mark
7(b)	Answers may include: • reliance on server (for logon / security / data) • need for network management (people / infrastructure / software) 1 mark	(1)

Question Number	Answer	Mark
8	Answers may include:	(8)

(i) Ethernet port / Wifi   the game can be played over the Internet
     Other network connection method
     Broadband speed given

(ii) Keyboard, mouse, other suitable   playing the game involves using a large number
      input device   of on-screen controls

(iii) DVD-ROM drive   only the game engine and start program are
       with multiplier   installed, the rest runs from the DVD-ROM

(iv) Specified high performance graphics   the game has a smoothly scrolling, 3 D display
      card

Accept any other reasonable specification which matches an appropriate feature.

Max 4 x 2

Question Number	Answer	Mark
9	SUM, F2 ... F6 2 marks	(2)

Question Number	Answer	Mark
9(b)	B2, *C2 2 marks	(2)

Question Number	Answer	Mark
9(c)	B6 + C6, *2, * D6 or B6 * D6, + C6 * D6, *2 3 marks	(3)

Question Number	Answer	Mark
9(d)	(condition) IF F11 > 500, (true) F11/4 / F11 * .25, (false)" " / 0 3 marks	(3)

Question Number	Answer	Mark
10(a)(	Answers may include: • Number of people • because crowd size affects movement / may be bottlenecks • Area affected by fire • larger area may block more exit routes • Disabled / less mobile people • may cause bottlenecks / block routes • Emergency service access points • people need to get in as well as out 2 x 2 1 mark for a sensible variable 1 mark for a matching explanation	**(4)**

Question Number	Answer	Mark
10(b)	Look for the idea that virtual crowds cannot exactly simulate real people Real people are unpredictable / reasonable example of real behaviour 2 marks	**(2)**

Question Number	Answer	Mark
11(a)(ii)	Answers may include: • Less staff / wages because of automatic order processing • Less staff / wages because of automatic payment processing • Cheaper than printing / posting catalogues • Reaches more customers Max 2	(2)

Question Number	Answer	Mark
11(b)	Answers may include: • More choice / more up to date list • More secure payment • Faster than post • Instant check on order / can see if book is available Max 2	(2)

Question Number	Answer	Mark
11(c)	Answers may include: • Advertising on other web sites • Direct e-mail to previous customers • Joining a web ring • Posting on bulletin boards / forums • Researching rival's prices / book lists Max 3	(3)

Question Number	Answer	Mark
12(a)	Answers may include: Pressure / weight sensor, triggered at set value electrical / resistance / capacitance / current sensor, value changes when exposed to air / out of liquid radiation / beta particles / gamma rays, value different in / out of liquid photocell triggered by light beam Any reasonable sensor and method of detection, 2 marks	(2)

• Question • Number	• Answer	• Mark
• 12(b)	• paper sensor detects front of paper / something sensible • paper sensor sends signal to microprocessor • • roller movement sensor measures speed / something sensible • roller movement signal sent to microprocessor • • microprocessor calculates time to start print / where roller needs to be / something sensible • • microprocessor sends signal to roller motor • adjusts motor / roller speed • Max 6 • **Total 8 marks** •	• • (1)

• Question • Number	• Answer	• Mark
• **13**	•	• • (7)

- Flowchart
-
-     Start + Stop
-     Input
-     Validation
-     Error message
-     Display countdown
-
-     Check for end, N =0
-     Reduce N by
-     Yes No correct
-     Both loops
- Max 7
-
- Structured English
-     Start + Stop
-     Input
-     Validation
-     Error message
-     Display countdown
-     Check for end , N =0
-     Reduce N by 1
-     Yes No correct
-     Structure on loops
- Max 7
- **Total 7 marks**
-

Flowchart: Start → Input N → decision ($N > 0$, $N < 100$) → Yes → Error (loops back to Input N); No → N → decision ($N = 0$) → No → $N = N - 1$ (loops back to N); Yes → Stop