



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme

June 2003

GCSE

Information and Communication Technology B

Full Course 3522 Higher

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1a(i)	These points. A3 is text C4 is a number D3 is a formula	3 marks
(ii)	These points. currency	1 mark
b(i)	Any reasonable but must work in a spreadsheet, for example: B4*C4, = B4*C4 Do NOT allow sum(B4*C4) NOT B4×C4	1 mark
(ii)	These points. Uses sum(range), 1m Range is one of D2:D5; D1:D5; D1:D6; D2:D6, 1m Allow D2..D5, etc. D2+D3+D4+D5 or equivalent, max 1m	2 marks
c(i)	Any reasonable. Identifies cell B5 in some way. Indicates that the new price is entered in the cell.	2 marks
(ii)	Any reasonable that identifies cells D5 and D7.	2 marks
d	These points in this order. pie; line; bar or column	3 marks
e	Any reasonable, for example: pie – shows relative importance of sales of each meal bar or column – easier to read off value of Takings NOT line	1 mark
Total		15 marks

2a	This point. Employee Number	1 mark
b	These points. Names validation check as a range check, 1m. Lower boundary is 0, and relationship with (Weekly Wage) field is correct, e.g. $0 < \text{Weekly Wage}$, 1m. Upper boundary is greater than 250 and less than 1000, and relationship with (Weekly Wage) field is correct, e.g. $\text{Weekly Wage} < 600$, or '3 digits', 1m Note: 0 and 1000 are allowed. No marks awarded but is describing a range check, 1m	3 marks
c(i)	This point. Casey and no others	1 mark
(ii)	These points. Hood, Habib, Clarke and Casey, and no others	1 mark
(iii)	These points. Hood and Habib, and no others	1 mark
d	This point. Employee Number is 03452	1 mark
e	These points. Instructions tell respondent what do to, 1m Design includes horizontal or vertical line that looks like part of an OMR form, for example, using pairs of brackets or similar, 1m Associates each job with a pair of brackets, for example: [EL] [FI] [PA] [SU], 1m	2 marks
f	Any reasonable advantage, for example: OMR does not have to be sensitised to each individual who uses it. Input using OMR is more accurate. Input of large volumes of information can be faster using OMR. Any reasonable disadvantage, for example: To use OMR you have to have the OMR form. The software has to be set to read the OMR form. Input of single words can be faster using voice recognition. OMR doesn't identify the person who inputs the data but voice recognition may do this. <i>Maximum 3 advantages</i> <i>Maximum 3 disadvantages</i>	5 marks
Total		15 marks

3a	<p>These points.</p> <p>Allow connection via the monitor.</p> <p>Allow the mouse to be connected to the keyboard instead of the Processor Box.</p> <p>Joins four other parts to Processor Box with no other connections, 2 m.</p> <p>Joins two other parts to Processor Box with no more than four connections shown, 1 m.</p> <p>Joins mouse, keyboard and printer to monitor, 1m</p>	2 marks
b(i)	<p>This point.</p> <p>a network card (BoD networking software)</p>	1 mark
(ii)	<p>These points.</p> <p>Draws a reasonable line or star topology.</p> <p>File server and three computers correctly and clearly located.</p> <p>Other network hardware correctly and clearly located.</p> <p>Connection to other networks correctly and clearly located.</p>	2 marks
c	<p>Any reasonable, for example:</p> <p>Storage on a hard disk is non volatile; storage in memory is volatile.</p> <p>RAM is a microchip; a hard disk is one or more magnetic disks.</p> <p>RAM is a microchip; a hard disk is physically a disk.</p> <p>RAM has no moving parts; a hard disk spins.</p> <p>Capacity of RAM is much less than a hard disk</p> <p>RAM stores programs being used; a hard disk is backing storage.</p>	3 marks
d(i)	<p>Any reasonable, for example:</p> <p>Web browser, email, operating system</p>	3 marks
(ii)	<p>Any reasonable advantage to a learner, for example:</p> <p>The learner can access distance learning course from any location with Internet access.</p> <p>The learner can access distance learning course 24/7.</p> <p>Children could learn from home and would not need to go to school.</p> <p>Subjects which interest only a few pupils could be studied without help from a teacher.</p>	2 marks
(iii)	<p>Any reasonable disadvantage to a learner, for example:</p> <p>The learner must have the use of a computer with Web access.</p> <p>Learners might not have help from a teacher if they use distance learning at home.</p> <p>Learners could be distracted by other material on the Internet</p>	2 marks
Total		15 marks

4a	<p>Any reasonable, for example: Record the temperature more frequently. Record the temperature during the day and at night. Record the temperature using several weather stations at different locations. Update the model with recent input data and results. Use a wider range of sensors, e.g. a humidity sensor.</p>	3 marks
b	<p>Any reasonable, for example: Wind speed; wind direction; rainfall; light</p>	3 marks
c	<p>Any reasonable advantage, for example. Up-to-date information can be collected more quickly. Information could be collected more frequently. A weather station could be located where a person could not reasonably go very often.</p> <p>Any reasonable disadvantage, for example. The information may not be collected if there is a power cut. The information may not be collected if the computer breaks down. Set up costs are more expensive.</p> <p><i>Allow no more than 3 advantages and no more than 3 disadvantages</i></p>	4 marks
d	<p>Any reasonable, for example: CCTV cameras intrude into people's privacy. CCTV could be used to monitor people's movements. CCTV cameras are expensive to install. CCTV cameras don't prevent crime (or speeding, etc.) People don't know who is watching them. People might feel they have to modify their behaviour if CCTV cameras are recording what they do. CCTV cameras could help track people.</p>	5 marks
Total		15 marks

5a	These points. D systems design A documentation C testing	3 marks
b(i)	These points. A list of current members. A list of all the videos that are in stock. A list of the videos each member has borrowed.	3 marks
(ii)	These points. Describes the process as mail merge, 1m Gives additional information, max. 2. For example: <ul style="list-style-type: none"> • Needs to use a database of ex-members names and addresses. (database only is BoD) • Letter can be personalised, e.g. set up a standard letter with fields in it. Print labels and stick them on the letters, or print on the envelopes or equivalent, 1m	3 marks
c(i)	Any reasonable, for example: The font is too small. The user documentation is not in simple English. The user documentation does not relate to how the computer system is used in VideoNow's business. Layout is too dense. No illustrations to show where to point and click.	3 marks
ii	Any reasonable. For example: On a web site. As a printed manual. Help in the software. Accept email help as a part of documentation, but not telephone help lines. On floppy disk.	3 marks
Total		15 marks

6a(i)	<p>These points. IF TEMPERATURE IS MORE THAN LEVEL THEN TURN HEATER OFF more than, 1m heater off, 1m full and complete answer, 1m</p>	3 marks
(ii)	<p>These points. Line 1 LEVEL = 20</p>	2 marks
b	<p>Any reasonable advantage, for example: The engineer should know how the system works. The engineer should be able to consult other experts if there are problems. The owner knows who is responsible if there are problems.</p> <p>Any reasonable disadvantage, for example: Conlev may not know Gregory House well enough to plan the installation of the system in the most effective way. Different engineers may call at different times, and their work may not be consistent. ConLev could overcharge.</p> <p><i>Allow at most 2 advantages and at most 2 disadvantages.</i></p>	3 marks
c	<p>These points. A. the software and hardware are easy to maintain C. the software and hardware are reliable D. the software and hardware are protected from damage by hackers and vandals</p>	3 marks
d	<p>Any reasonable advantage to the environment. For example: It is easier to control the heating because this is done centrally. The central heating system can be adjusted for optimum fuel economy. The temperature can be automatically adjusted depending on a person's presence or otherwise. The amount of fuel used can be monitored more easily.</p> <p>Any reasonable disadvantage to the environment. For example: Rooms could be heated even if they are not being used. The heating system has more components and is more complex and so is more likely to go wrong. If the system is set to maintain a given temperature, it will try to do this even if the windows are open. If the computer breaks down the heating may not work throughout the building. The computer hardware is not easily re-cycled.</p> <p><i>Allow at most 2 advantages and at most 2 disadvantages</i></p>	4 marks
Total		15 marks

7a	<p>These points.</p> <p>A baby asleep in an upstairs bedroom can be watched by its parents downstairs.</p> <p>People all over the world can watch the space shuttle taking off as it happens.</p> <p>Pupils in a geography lesson can watch a volcano erupting at the other side of the world.</p>	3 marks
b	<p>Any reasonable advantage, for example:</p> <p>WebCams can be very small and discreet.</p> <p>A WebCam on top of a computer could record who is using it, deter unauthorised users.</p> <p>A WebCam can record what is put into and taken out of a till, to deter theft.</p> <p>Recordings can be used to identify criminals.</p> <p>WebCams can be used without the knowledge of those being videoed.</p> <p>Many people can watch from different computers all over the world.</p> <p>People can watch things they might not see otherwise.</p> <p>Any reasonable disadvantage, for example:</p> <p>The image from a WebCam can be poor quality.</p> <p>A WebCam does not physically prevent crime.</p> <p>A WebCam can interfere with personal privacy.</p> <p><i>Allow at most 3 advantages and at most 3 disadvantages.</i></p> <p><i>Allow general or specific points.</i></p>	4 marks
c	<p>Any reasonable, for example:</p> <p>Security threat 1: A virus can be downloaded attached to an email.</p> <p>Prevention 1: Use a virus checker to detect and automatically delete emails with viruses.</p> <p>Security threat 2: Others intercept and read your email.</p> <p>Prevention 2: Encryption.</p>	4 marks
d	<p>Any reasonable.</p> <p>Any solution must leave the hardware useable.</p> <p>For example:</p> <p>Secure computers to the bench.</p> <p>Locate computer rooms off the ground floor.</p> <p>Restrict access to computer rooms using swipe cards and locks.</p> <p>Use security film or wire grills on the windows.</p> <p>Supervise computer rooms when they are in use.</p> <p>Have a WebCam to record who is using the hardware.</p> <p>The presence of a security guard can be concealed but he/she can still discretely monitor the hardware.</p> <p>Mark equipment with identification, e.g. UV</p> <p>Keep computers out of sight.</p> <p>Don't eat or drink when using a computer.</p> <p>NOT passwords to access the computer.</p>	4 marks
Total		15 marks

8a	<p>Any reasonable advantage. For example: Internet banking/shopping is open 24/7. Customers can get a bank statement at any time. Customers can set up bill payments in advance. Goods are usually cheaper than in High Street shops. A wider range of goods is available. Goods can be delivered to any address, so it is easier to send people presents. You can do your banking or shopping without leaving home. Goods can be delivered to your home. BoD: it's easy to transfer money.</p> <p>Any reasonable disadvantage. For example: If the bank's Internet site is not available access to a customer's account is very limited. The range of services offered can be very limited compared with a conventional bank. You can't talk to someone when you need advice. You may not know exactly what you are buying until it is delivered. To return goods you have to post them back. If the goods you ordered are not available, other goods may be substituted and you may not want these. Goods may take a long time to be delivered. You have to have a computer and/or Internet access.</p> <p><i>Allow at most 5 advantages and at most 5 disadvantages.</i></p>	8 marks
b	<p>Any reasonable advantage. For example: You may receive advertising for goods you are interested in. Companies may develop new products if they know in advance there's a market for them. Companies may develop better products if they know what customers want.</p> <p>Any reasonable disadvantage. For example: You may receive a lot of junk mail. You may receive a lot of junk email. You may receive a lot of information about goods that you are not interested in. Telesales persons may ring you up to sell you goods.</p> <p><i>Allow at most 3 advantages and at most 3 disadvantages</i></p>	4 marks
c	<p>Any reasonable.</p> <p>Personal information must be: fairly and lawfully processed processed for limited purposes adequate, relevant and not excessive accurate not kept longer than necessary processed in accordance with the data subject's rights secure not transferred to other countries without adequate protection</p>	3 marks
Total		15 marks