



GCE MARKING SCHEME

INFORMATION AND COMMUNICATION TECHNOLOGY AS/Advanced

JANUARY 2011

INTRODUCTION

The marking schemes which follow were those used by WJEC for the January 2011 examination in GCE INFORMATION AND COMMUNICATION TECHNOLOGY. They were finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conferences were held shortly after the papers were taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conferences was to ensure that the marking schemes were interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conferences, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about these marking schemes.

ICT1

1.(a)	<p>Data is raw facts and figures CONDONE Raw facts or raw figures but do not accept has no meaning. Knowledge is derived from information by applying rules to it.</p> <p><i>Example:</i> Swimmer 1 63.6s, Swimmer 2 59.3s, Swimmer 3 59.7s and swimmer 2 is the fastest and consequently wins. <i>Example:</i> John's 18th birthday is 11th January 2011 and so now he can vote in the next election. The rule must be stated or implied. (answer is likely to show two stages)</p>	<p>1 1 1 1</p>
1. (b)	<p>Any 2 from</p> <ul style="list-style-type: none"> • Takes less effort to type in / faster to type in • takes up less storage space • quicker and easier to validate / less likely to make entry errors / consistency of data • faster to search for (idea of computer matching) • CONDONE More data can appear on the screen. <p>NOT less chance of getting rsi.</p> <p>Encoding is NOT encryption.</p> <p>Example involving: a concrete example e.g. when looking at eye colour Accept: Coarsening data leading to loss of precision Limited choice leading to less accurate data Value judgements can lead to inconsistency</p> <p style="text-align: center;">NOT unable to understand the code</p>	<p>2 1</p>
2. (a)	<p>One mark for each specific use, advantage and disadvantage Use: e.g.</p> <ul style="list-style-type: none"> • Expert using it to find information on network configuration • Writing small batch files in DOS <p>Advantage:</p> <ul style="list-style-type: none"> • Fast to execute (run) • Don't have to go through menu system • Needs very little overheads (memory / processor) <p>Disadvantage:</p> <ul style="list-style-type: none"> • Need to know the commands • only experts are able to use them • a lot of typing • can be frustrating for inexperienced users. 	<p>1 1 1 1</p>

2. (b)	<p>Need to be clear that candidates are discussing input e.g. Voice control in car navigation systems - not brand name Security systems Control systems Telephone ordering system Mobile phone voice control Doctors can use them to dictate notes directly into a computer. Student dictating an essay directly into word processing software.</p> <p><i>Advantage:</i></p> <ul style="list-style-type: none"> • Quicker than typing • Allows people to enter text directly into a computer without using a keyboard • Can perform complicated tasks by dictation. • Can empower disabled. <p><i>Disadvantage:</i></p> <ul style="list-style-type: none"> • Need a powerful computer • Problems with regional accents / foreign words • Have to speak slowly • Interference from background noise • Colds, etc., affecting voice • Need time to train the system • Differentiating homonyms – their and there, to, two and too, etc. NOT Can't understand the voice. 	<p>1</p> <p>1</p> <p>1</p>
3.	<p>Any three (description + example) Three points in a list only 1 mark.</p> <ul style="list-style-type: none"> • Correctly targeted – The question should be targeted at the people who are going to use it - no good asking vegetarians about meat eating. • Understandable – The meaning of any information should be clear to the user. A manager might misunderstand a complex table and order the wrong items. Encoding is not a viable example. • Complete – Has to include all the information. Missing postcode will delay delivery of items. • Relevant – Data has to be related to the task you are trying to investigate. No good collecting information on ice-cream sales in Alaska in the winter if you want to open your kiosk in California. • Up-to-date – Information changes with time and without a date stamp could be too old to be useful. Using a 5 year old mailing list might end up in letters being sent to dead people or people who have moved. <p><i>Accept Timely</i> as an alternative to up-to-date if described adequately Reliable if refers to source of information.</p>	3x2

4.(a)(i)	<p>A query is when you interrogate (search, sort, filter) a database to find some information.</p> <p>A search to find all the pupils in Year 8 because they need to be sent TB injection letters.</p> <p>Need to indicate why to show whether query is appropriate.</p>	1 1
4.(a)(ii)	<p>Report – The output from a database in which the results are presented in a way that is controlled by the user. (formatted i.e. tables / graphs / grouping / statistical summary) NOT It is a printout</p> <p>Producing formatted lists of pupils who study each subject to work out rooms for exams. A mark for the example can be given if the definition is wrong but their answer involves formatting</p>	1 1
4.(a)(iii)	<p>Import/export –</p> <ul style="list-style-type: none"> • The ability of a piece of software to read and use the data produced by a different piece of software. • Transferring data from one piece of software to another. <p>Exporting names and addresses into a word processing program to produce detention letters.</p>	1 1
4.(b)	<p>Any 2 from</p> <ul style="list-style-type: none"> • Data may be combined more flexibly • No data duplication (Saves memory space if qualified) • Data integrity is maintained • Easier to search for specific information as relational databases have better built in facilities • Data is <u>more</u> consistent • Include their own programming language • Greater security because of hierarchy of access levels. 	2
5.(a)	<p>Any 2 x 2 (1 for describing feature and 1 for example) (MAX 1 mark for a list)</p> <ul style="list-style-type: none"> • Costings – Allows a database of prices of materials to be created. The program can explore the cost of different options in a kitchen plan. • Hatching/Rendering – can use different finishes or materials. Can do ‘what if’ investigation to see the effect of different finishes. • Stress/strain – allows design features to be checked against requirements. By working out the weights of materials can avoid a later disaster. • Walk-through – internal view in 3D / visit rooms in 3D. Allows a supermarket to visualise what the building will be like by testing out various layouts. • 2D/3D, Layering, Library of symbols, wireframe, simulation, dimensioning, prototyping 	2x2
5.(b)	<p>For two marks must include design on computer and making object using computer driven machine (design and make 1) (object and process 1)</p> <p>Examples of 1 mark answers –</p> <ul style="list-style-type: none"> • CAM is the use of computers to control the manufacturing process using a design created in a CAD package. • CAD designs an object using a computer and CAM makes the object using a computer guided machine. <p>Example for 2 marks - Clothing designed in CAD package and then cut out correctly and stitched by a CAM package - Or similar.</p>	2

6.	<p>Verification is a (human) check ensuring that data has been copied correctly from one medium to another (entered correctly). or Verification is the use of checks to make sure data is consistent and has not been corrupted.</p> <p>Validation is a (computer) check to ensure that data is sensible / reasonable / legal (but NOT correct or accurate). or Validation is the automatic checking of data entered into a computer system.</p> <p><u>Examples:</u> One mark for method and field, One mark for sensible expansion. Examples of 1 mark answers</p> <ul style="list-style-type: none"> • Presence check on gender (1) • Format check on postcode. (1) <p>Examples of 2 mark answers</p> <ul style="list-style-type: none"> • Range check on pupil DOB (1) to ensure in correct school year. (1) • Check digit on candidate number (1) to ensure that their results are for the correct person. (1) 	<p>1</p> <p>1</p> <p>2</p>
7.(a)	<p>Hacking into a person's bank account (1) to transfer money elsewhere. (1)</p> <p>Creating a virus which finds bank account details (1) and transmits it to a third party. (1)</p> <p>Creating a virus which attacks bank computer (1) so user cannot access account. (1)</p> <p>Phishing to get hold of username and password for their account (1) to steal their identity. (1) (Explanation of Phishing or Hacking could be another way of getting part of the mark)</p> <p>NOTE: Identity theft is not a crime under the CMA in itself. NOT blackmail</p>	2x2
7.(b)	<p>Either 1 mark for each point (max 2) OR 2 for a well developed answer.</p> <ul style="list-style-type: none"> • Backups stored off site • Backups stored in a fireproof safe • Backup cycles / regular backups (grandfather, father, son) • Training in good practice • Use of write protection 	2

8.(a)	<p>5-6 marks Candidates give a clear, coherent answer fully and accurately explaining what a barcode is and discussing advantages and disadvantages. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>3-4 marks Candidates give an explanation, advantage and disadvantage but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-2 marks Candidates simply give a brief explanation and may give an advantage or disadvantage. The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Indicative content Answers have to cover all 3 sections to get full marks. Max of 2 each section (including 1 advantage and 1 disadvantage).</p> <p>Description of barcode</p> <ul style="list-style-type: none"> • A barcode is a series of light and dark bars of differing widths • With a code number printed underneath / which can be used if there is a fault with the barcode • Made up of country of origin code, manufacturer code, the product code, a check digit. (Any 3) (If PRICE included NO mark.) <p>How system works</p> <ul style="list-style-type: none"> • Barcode scanned <u>at POS</u> • Code matched on stock database • Price sent to POS • One deducted from stock database • Itemised bill produced <p>Advantage</p> <ul style="list-style-type: none"> • <u>Faster to enter data</u> as can read at any angle • More accurate as eliminates typing errors • Low printing costs • Frees staff to do other tasks <p>Disadvantages</p> <ul style="list-style-type: none"> • Can only be used for the input of numbers • Equipment is expensive • Corrupted barcodes can cause delays 	6
-------	--	---

8.(b)	<p>6-7 marks Candidates give a clear, coherent answer fully and accurately explaining 'just in time' and discussing advantages and disadvantages. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>3-5 marks Candidates give an explanation, advantage and disadvantage but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-2 marks Candidates simply give a brief explanation and may give an advantage or disadvantage. The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Indicative content Answers have to cover all 3 sections to get full marks. No more than 3 per section. How it works:</p> <ul style="list-style-type: none"> • 'Just in time' goods are delivered to the store as fast as they are being sold. • Item sold decreases record by 1 • checked against reorder level • if below automatic level request sent to supplier • stock delivered and table updated. <p>Advantages:</p> <ul style="list-style-type: none"> • Smaller storage / warehouses needed as not much stock held • Store is better able to respond to changing demand • Easier to cope with several small deliveries (less staff) than 1 big one. • Do not run out of fast selling items • Less risk of stock being out of date <p>Disadvantages:</p> <ul style="list-style-type: none"> • Expensive to introduce • More admin staff as store responsible for own ordering • True stock may differ because of theft, etc. • Cannot respond to unusual demand • Disruption to transport. 	7
-------	--	---

8.(c)	<p>4 marks Candidates give a clear, coherent answer fully and accurately describing benefits and limitations. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>2-3 marks Candidates make brief points about benefits and limitations. There are a few errors in spelling, punctuation and grammar.</p> <p>1 mark Candidates response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Indicative content Answers have to cover both sections to get full marks. <i>Some points may be a benefit to customers but a limitation to the supermarket and can only be awarded once.</i></p> <p>Benefits</p> <ul style="list-style-type: none"> • Always accessible (both) / Available 24/7 (customer) • Low start up and running costs (company) • Save money on rental space • Cheaper to update website than a catalogue • Automatically produce shopping lists • Easier to update • Global marketplace • Other income sources / advertising • Easier to find information because of search engine • Greater choice • Saves on travel costs / shop from home • Can be used by disabled customers • Price comparisons <p>Limitations</p> <ul style="list-style-type: none"> • Lack of consumer trust • Lack of interaction with people • Security of website • Problems when something goes wrong (wrong goods /transport breakdown) • Replacement alternatives • Expensive initial set up costs • Reduces options – cannot choose longest sell by date <p>NOT general benefits or limitations of online business.</p>	4
-------	--	---

9.	<p>4 benefits OR 2 marks for benefits and 2 for further explanation.</p> <p>Ability to recalculate the quote (1) – if a customer adds or takes away items from the list, can automatically recalculate the cost. (1) Can perform ‘what if’ models the cost of different qualities, items, etc. (1) Can show graphically by producing various charts and graphs of sales (1). Show comparison between different salesmen to foster competition (1). Accurate calculation of commission (1) – will increase efficiency and saves time by preventing sales staff from having query errors (1).</p> <p>Max 2 for ‘no context’ i.e. two from: ability to recalculate; can show graphically by producing various charts and graphs; accurate calculation, perform ‘what ifs’.</p>	4
10.(a)	<p>What (1) and Why (1)</p> <p><i>Examples:</i> I used the SUM function (SUM C2:C24) in column C of page 3 to add up all the costs of the different items sold every week (What) to work out my total income (Why).</p> <p>I used SINGLE IF in cell E14 on page 5 to work out if the account holders were overdrawn =IF (D2 <0, “ACCOUNT OVERDRAWN”, “Account in credit”) the message “ACCOUNT OVERDRAWN” appears and if the amount is not negative then the message “Account in credit” appears.</p> <p>I used the DATE function in cell F3 on page 2 to work out the difference in days between when the payment should have been made and when it was actually made so that interest could be charged on the outstanding balance.</p>	3x2
10.(b)	<p>What (1) Further detail (1) Why (1)</p> <p>2 x one mark for the correct name of a method and up to 2 marks for further details.</p> <p>Any validation method or spinners or drop down boxes.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> • I used a list box on transport methods on page 4 in cell D3 (1) which meant users were restricted to a set of choices of data (1) to the items in the list such as car, bus, train, bike, walk (1) or speeded up the entry process. • I applied a range check on hotel room number in cell F5 on page 6, (1) by only allowing whole numbers between 1 and 99 to be entered (1), because there are only 99 rooms in the hotel (1) (<i>Alternatively</i> - I created an error message “data must be between 1 and 99”. (1)) 	2x3
10.(c)	<p>What (1) and Why (1)</p> <p>Macro, Graph, Sort, Search, VLOOKUP, 3D referencing, etc. E.g. I used 3D referencing with four worksheets in my workbook (see pages 9, 10 and 11), so that I could look up similar sales data for each month (1) contained in the different work sheets (1) and composed the results on the summary (1), etc. Graph: The graph on page 8 showed me how money was spent (1) and it allowed me to work out the break even point (1) My macro shown on page 4 defined the special print settings in the Page Setup dialog box (1) and printed the invoice on page 5 (1) Identify a navigation macro and where is it going to/between (1) this will make it more user friendly / to move backwards and forwards more efficiently (1)</p>	[4]

ICT3

1	<p>Any four of the following, discussed in detail: 4 x 2 1 mark per factor - 1 mark per explanation. (No Factor no mark for extension) <u>Note</u> explanations must be distinctly different and match the factor.</p> <p>NOT differentiation between user expertise.</p> <p><u>Consistency of signposting and pop up information</u> <i>e.g. Every 'Next' should be in the same place using the same icon.</i> <i>Navigation around the program should be clear consistent and easy to follow. – intuitive, learn faster</i></p> <p><u>Clear navigational structure</u> <i>e.g. It speeds things up if there is a similar route through the programs (if it is clear) as users do not have to keep learning things / Helps users learn their way around the system.</i></p> <p><u>Layout appropriate to the task</u> <i>There should be standard 'feel' to software.</i> <i>e.g. Large/minimal text for a child to minimise reading which builds up user confidence./ Bright colour scheme to attract a young child's attention.</i> <i>Doing a repetitive task such as entering holiday bookings means you have less guidance on the screen. Note Nothing to do with devices</i></p> <p><u>Customisable to suit the needs of the user</u> <i>e.g. Makes it more efficient if the user can change items to suit their work preference.</i></p> <p><u>Location of where machine is to be used</u> <i>e.g. No sound in a noisy area.</i> <i>Touch screens in museums / factories / etc, (with explanation of why).</i></p> <p><u>House Style/Ethos (Not Consistent Layout)</u> <i>e.g. So that it conveys who the organisation is and all the company docs look/feel the same.</i></p> <p><u>Specific point about colour blindness</u> <i>e.g. Design to avoid red/green combination - blue/yellow best combination.</i></p> <p><u>On Screen / online helpfiles (built in with software)</u> <i>e.g. Rather than wasting time looking in manuals, important if no outside help available when working. / Tool tips telling the user what to do. / interactive user manual that answers general FAQ. No marks if can be read as a Google search.</i></p> <p><u>Disabled Access</u> <i>e.g. If a person is blind then the computer could recognise voice input / Braille keyboard.</i> CONDONE: Font size –(but not as a factor) readability, appropriate to level of user, avoid eye strain List of 4 =1 mark</p>	8
2	<p>FTP (File Transfer Protocol) is a <u>standard Internet protocol</u> providing a simple way of <u>transferring files between computers using the Internet</u>, (by a process which bunches the data into packages and sends messages back and forth to say each package has been received.) OR FTP is a standard set of rules (1) that have been established to allow the exchange of (large) files over the internet (1). MUST BE CLEARLY NOT ABOUT EMAIL OR COMPRESSION Not Instructions instead of rules or Data instead of files</p>	2

3	<p>You are not limited to file size unlike with email attachments / allows reliable transfer of files between platforms / greater security in transfer of information / can have greater control of remote computer (if well developed).</p> <p>Used for uploading a database of sales from one branch of the organisation to the head office (1). (Always need to know what the data are) Or to distribute information between the company and their customers and suppliers (1) Or Used for down/uploading a website from/onto the internet/server (1). Or other relevant example (1) e.g. Transfer files from mac to pc. NO SCHOOL EXAMPLES</p>	1 1
4	<p>URL (Universal Resource Locator) is the web address of a site / the address for a web page on the world wide web / the recognised method for referring to resources on the internet / the unique address for a file that is accessible on the Internet.</p> <p>You simply type it in / click on it to go directly to the website you want. (action and effect)</p>	1 1
5	<p>A web crawler is</p> <ul style="list-style-type: none"> • a program that automatically browses all web pages (in a systematic manner). • one type of software agent, or bot which (automatically) visits a list of URLs. <p>Provides data about web pages in order to produce an index (database/list) which can be used by a search engine to enable fast searches. Can be used for automating maintenance tasks on a Web site, such as checking links or validating HTML code. Can be used to gather specific types of information from Web pages, such as harvesting e-mail addresses.</p>	1 1
6	<p>A Boolean search is a search using the operators AND, OR or NOT. NOT YES or NO.</p> <p>Using AND narrows a search by combining terms; it will retrieve documents that use both the search terms you specify, (e.g. Portland AND Oregon) Using OR broadens a search to include results that contain either of the words you type in, (e.g. liberal OR democrat) Using NOT will narrow a search by excluding certain search terms, (e.g. France NOT Canada) It helps save time searching for information as it helps you narrow down a search.</p> <p><u>Example for 2 marks</u> A Boolean search allows you to combine words and phrases using the words AND, OR, NOT and NEAR to limit, widen, or define your search.</p>	1 1

7	<p>3 x (1 mark for giving each factor and a 2nd mark for a fuller description) NOT COST OR SIZE OF ORGANISATION How the system will be used</p> <ul style="list-style-type: none"> • What type of applications do users require?/ Are the users going to require a wide range of applications? • Will they need large data storage?/ Are they going to store a large number of data files? • From where will they operate the network e.g. at home in office or remote access from different locations. / Where does the processing get done? <p>Existing systems</p> <ul style="list-style-type: none"> • More often networks are not developed from scratch but need to fit in with existing systems. Sometimes an extension is required e.g. when a new branch office opens. • Therefore any new network must fit in with the existing operating systems and protocols. • It must support any peripherals already in use e.g. bar code readers, printers, etc. • Can the current stock of PC's and peripherals be used on the new network? <p>Performance in terms of: reliability / user friendliness / capacity / speed of processing Different parts of the organisation may have different performance requirements. e.g. a real-time e-commerce system may require greater speeds and capacity and security than the in house payroll system.</p> <p>Condone security if reference to level of risk NOT hacking / viruses</p> <p><i>If candidates only list 3 factors then maximum mark is 1.</i></p>	3 x 2		
8	<p>Answers should compare the following factors of the two networks. Any 6 comparisons (only give cost or knowledge once)</p> <table border="1" data-bbox="165 1059 1437 2004"> <tr> <td data-bbox="165 1059 810 2004"> <p><u>Peer to peer</u> Cost saving – no server is needed, so all the computers can be the same Status – All machines have same status No network manager is needed – all users take responsibility for the network Knowledge - Users need more IT knowledge</p> <p>Easy to set up – they are the simplest of computer networks, can be set up by anyone No reliance on a server – no worry about the server breaking down Lower operating costs – less set up and maintenance costs Peer responsibility – users decide what resources others can use on their computer Security - Poorer security as resources are shared</p> <p>Back ups cannot be made centrally – this places the responsibility on all the users to back up their own data. Harder to find files which are not stored centrally Network size - Only suitable for very small networks (15 or less)</p> </td> <td data-bbox="810 1059 1437 2004"> <p><u>Client server</u> More expensive – servers are expensive to buy One machine more important than the rest Need specialist knowledge – need a person with technical knowledge to manage network Network manager allocates access to resources on the network</p> <p>Network operating systems require technical knowledge to set up and maintain If server breaks down network is unusable.</p> <p>Cost of setup and maintenance is higher</p> <p>Users need little specialist knowledge as administration is performed centrally Security is better as it is centralised and one persons responsibility (not just hierarchy of passwords)</p> <p>Backups and software installation can be done centrally</p> <p>Centrally stored files are easier to find</p> <p>More efficient/ load tolerant for large networks</p> </td> </tr> </table>	<p><u>Peer to peer</u> Cost saving – no server is needed, so all the computers can be the same Status – All machines have same status No network manager is needed – all users take responsibility for the network Knowledge - Users need more IT knowledge</p> <p>Easy to set up – they are the simplest of computer networks, can be set up by anyone No reliance on a server – no worry about the server breaking down Lower operating costs – less set up and maintenance costs Peer responsibility – users decide what resources others can use on their computer Security - Poorer security as resources are shared</p> <p>Back ups cannot be made centrally – this places the responsibility on all the users to back up their own data. Harder to find files which are not stored centrally Network size - Only suitable for very small networks (15 or less)</p>	<p><u>Client server</u> More expensive – servers are expensive to buy One machine more important than the rest Need specialist knowledge – need a person with technical knowledge to manage network Network manager allocates access to resources on the network</p> <p>Network operating systems require technical knowledge to set up and maintain If server breaks down network is unusable.</p> <p>Cost of setup and maintenance is higher</p> <p>Users need little specialist knowledge as administration is performed centrally Security is better as it is centralised and one persons responsibility (not just hierarchy of passwords)</p> <p>Backups and software installation can be done centrally</p> <p>Centrally stored files are easier to find</p> <p>More efficient/ load tolerant for large networks</p>	6
<p><u>Peer to peer</u> Cost saving – no server is needed, so all the computers can be the same Status – All machines have same status No network manager is needed – all users take responsibility for the network Knowledge - Users need more IT knowledge</p> <p>Easy to set up – they are the simplest of computer networks, can be set up by anyone No reliance on a server – no worry about the server breaking down Lower operating costs – less set up and maintenance costs Peer responsibility – users decide what resources others can use on their computer Security - Poorer security as resources are shared</p> <p>Back ups cannot be made centrally – this places the responsibility on all the users to back up their own data. Harder to find files which are not stored centrally Network size - Only suitable for very small networks (15 or less)</p>	<p><u>Client server</u> More expensive – servers are expensive to buy One machine more important than the rest Need specialist knowledge – need a person with technical knowledge to manage network Network manager allocates access to resources on the network</p> <p>Network operating systems require technical knowledge to set up and maintain If server breaks down network is unusable.</p> <p>Cost of setup and maintenance is higher</p> <p>Users need little specialist knowledge as administration is performed centrally Security is better as it is centralised and one persons responsibility (not just hierarchy of passwords)</p> <p>Backups and software installation can be done centrally</p> <p>Centrally stored files are easier to find</p> <p>More efficient/ load tolerant for large networks</p>			

9	<p>Four x 2 or any 8 points for a mark each. (Problem and consequence)</p> <p>As there is no control over people who put information up on the internet, unless special software is used, children can easily gain access to pornographic or violent images and be corrupted.</p> <p>Lack of policing of the internet means that information is not checked to ensure that it is correct, very hard for children to be able to check the accuracy of the information.</p> <p>Laws cover the production or distribution of pornographic material but as much of the material comes from other countries, where it might be legal, not much can be done to stop it.</p> <p>Real worry is that paedophiles use the Internet for distributing pornographic pictures of young children and they also can use it to lure children into meetings with them after they have spoken to them in chat rooms.</p> <p>Other offensive material such as pictures of hounds ripping a fox to pieces.</p> <p>Other answers may discuss e.g. Cyber bullying / consequences of plagiarism / bias of information (accuracy) / copyright / lack of privacy.</p> <p>CONDONE Addiction to computer games / social networking – many children spend hours playing computer games and their social skills and schoolwork can suffer as a result / could suffer rsi.</p>	8
10	<p>(2 marks for each of 2 points) One mark for describing method and one mark for expansion / purpose / specific use A detailed description of a point can be given 2 marks</p> <p>Interviews – interviews with managers normally reveal how the departments work and any current problems. Normally will say how they want the new system to work and what information they want. Operational staff can supply fine detail on how the current system works. Very time consuming as a lot of people have got to be contacted. Needs skilled interviewers to get the correct information out of people.</p> <p>Observation (inspect/ look at / shadow) – sit and watch how somebody does their job at present so that one can understand what they do, how and what information flows, the processes that are performed and any time delays, crashes or interruptions. Can be time consuming and span several weeks before you can see everything.</p> <p>Inspection of records – studying the paper based information produced by the company at the moment. Allows one to see what information is currently held and the way it is communicated between different departments or customers and the company. Documents include organisational charts, manuals, reports, minutes of meetings and all documentation.</p> <p>Questionnaires – ideal way to collect information as you do not have to waste time talking to people and can stick to the important points without digressing. Economical to reproduce and distribute. Problem is that people forget to fill them in and hence an incomplete picture. Response rate from posted surveys is often poor. Respondents may misunderstand some of the questions. Cost involved in hiring people to ask others to fill in questionnaires and collect results can be significant.</p>	2x 2

11	<p>1 mark for definition, 3 marks for what it includes</p> <p>A feasibility report: <u>is the summary of an initial investigation to look at the likelihood of being able to create a new system</u> with stated aims and objectives at reasonable cost. The document is used by senior managers to assess whether it is worth continuing with the project.</p> <p>Or <u>Considers the request for a new system from different perspectives, (usually economic, operational and technological) to determine whether it is worth the organisation undertaking the project.</u> (Could be looking at cost benefit)</p> <p>Should include e.g.</p> <ul style="list-style-type: none"> • User requirements should be identified (aims and objectives). • Definition of the scope of the present system (outline current system). • Major data processing functions and processes (data flow). • Identification of problems with the current system. • Cost benefit analysis of the new system / Consider cost implications in terms of human resources, consultancy fees, training requirements, hardware upgrading, payment to third party providers, licences and fees, etc • Details of existing hardware and software. / Consider technical issues including: do they have equipment to implement; do they have in-house technical expertise; are there compatibility issues with existing systems • Consider operational issues including: impact on day to day work; what training will be required; will re-structuring be necessary; other logistic and practical issues • Potential improvements / benefits on the new system • Conclusions /Is it worth proceeding. 	<p>1</p> <p>3</p>
12	<p>Max 2 marks for definition</p> <p>An employee code of conduct consists of rules/agreement (1) drawn up by the senior management or their advisors that set out what an employee is/is not allowed to do in the course of their employment. (1) It also details the sanctions which will be applied should the employee not obey the rules. (1). (2 out of 3)</p> <p>Description of any 4 from: – List gets 1 mark</p> <ul style="list-style-type: none"> Responsibilities Respecting rights of others Abiding by current legislation Protecting hardware and software from malicious damage Complying with licensing agreements Authorisation – what parts of the system they can use Permissions on data access Security defining rules about password disclosure, data transfer rules and personal use of emails and the Internet Consequences of breaking the code 	<p>2</p> <p>4</p>
13	<p>2 points from</p> <ul style="list-style-type: none"> By enforcing the penalties and reminding all staff of their responsibilities of breaking the code and the consequences. Informal (verbal) warnings Written warnings Dismissal Prosecution Provide training Provide employee handbook 	<p>2</p>

14	<p>6-8 marks Candidates give a clear, coherent answer discussing advantages and disadvantages of teleworking using suitable examples. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>3-5 marks Candidates discuss advantages and disadvantages and may give examples but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-2 marks Candidates simply make brief points and may give an advantage or disadvantage. The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Indicative content Answers have to cover all 4 sections to get full marks. (lose 1 for every section not covered)</p> <p><i>The advantages of teleworking for the employee</i></p> <ul style="list-style-type: none"> • Teleworking makes it easier for people to live and work where they choose, as it is possible for some staff to work from home (less stressful). • It reduces traffic congestion and carbon dioxide emissions and is therefore 'greener' / this has an environmental benefit since there is no commuting to work. • Not having to travel to work saves time/money. • Flexibility of working hours / Work your own hours / Fit around family commitments / No need to take time off to see workmen • Ideal for disabled <p><i>The disadvantages of teleworking to the employee</i></p> <ul style="list-style-type: none"> • Home costs such as heating, lighting increase • Employee may feel isolated • Some employers may pay teleworkers less as there is more competition for jobs • No workmates to go out with /socialise • Boundary between home and work is lost • Loss of status for some staff – no plush offices, etc. • May not be a quiet place in the house to work • Passed over for promotion <p><i>The advantages of teleworking to the company</i></p> <ul style="list-style-type: none"> • Smaller offices are needed • Fewer backup staff need to be employed (e.g. cleaners, caretakers) • Staff less likely to spend time off sick • Reduced office overheads (electricity, gas, insurance, furniture etc) • Staff may be more amenable to working flexible hours • Retaining skilled workers / maternity • Employ workers from a wider pool of talent • Comfortable environment can lead to greater productivity <p><i>The disadvantages of teleworking to the company</i></p> <ul style="list-style-type: none"> • Change to organisational structure may be needed • Hard to determine how hard staff are working (monitor progress) • Harder for managers to manage the work • Increased number of sites for ICT equipment may cause more security risks • Employers usually pay for the employees' ICT equipment • More difficult to hold meetings face to face • Health and Safety checks needed on employee home • More security risks as more sites 	8
----	--	---

15	<p>6-8 marks Candidates give a clear, coherent answer explaining four factors with reasons. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>3-5 marks Candidates explain briefly and may give reasons but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-2 marks Candidates simply make brief points and may give a reason. The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Make 2 points about each factor x4 The plan will usually cover the following:</p> <p>Cost Set up a budget for it What backup medium should be used? Tape or disc/ Raid systems depending upon the speed or money available to recover the data Hardware can be replaced how much money have they got Software can be re-installed. (or de-bugged by the programming department).</p> <p>Risk What problems could occur? Likelihood of them occurring e.g. are they going to get an earthquake in UK On site or off site depending upon costs and the likelihood of the risk occurring and the criticality of the data.</p> <p>Data No business can afford to lose its data. Backups of all data should be regularly made. This means that the worst case scenario is that the business has to go back to the situation of the last backup and carry on from there. Backups may take a long time – often tape-streamed at night.</p> <p>Hardware/Software/Communications The total or partial loss of computing equipment or software The complete or partial loss of telecommunications equipment or services The complete or partial loss of the premises housing the IT equipment. The loss of essential services such as electricity, heating or air conditioning Alternative communication /computer systems may be arranged in case a network goes down or alternative power supply.</p> <p>Personnel, Responsibilities and Training The loss of certain key employees (e.g., losing all the qualified network staff in one go due to them choosing to form their own facilities organisation) The loss of maintenance or support Make one person responsible for backups so people don't think others are doing it and it does not get done or do they use online backup companies or both! Screening potential employees Routines for distributing updated virus information and virus scanning procedures Define procedures for downloading from the Internet, use of floppy discs, personal backup procedures Define staff code of conduct for using computer systems e.g. no abusive emails. No illicit use etc. What response should staff make when the disaster occurs</p> <p>Procedures Produce procedures for minimising the risks Test the plan on a regular basis to make sure it still sufficient Establish physical protection system (firewalls etc.) Establish security rights for file access and updating web pages Establish a disaster recovery programme. This starts with a backup policy to secure the data so it can be recovered later e.g. backup procedures required. How often should backups be taken? Restoration policy backup every day/hour and rotate tapes to ensure there is always a copy to restore files What type of backup? Where the backup is to be stored? Decide upon types of backup full, incremental or differential depending upon how many items of data are changed Set up auditing procedures (Audit trails) to detect misuse Premises relocation</p>	8
----	---	---

16	<p>Systems that convert data from internal or external sources (1) into information and resources designed to support the decisions of managers(1). OR MIS are organised collections of people, procedures and resources (1) designed to support the decisions of managers(1). OR MIS are programs designed to produce timely, relevant and accurate information to help managers make good decisions. (1)</p> <p>Examples of use similar to the following:</p> <ul style="list-style-type: none"> • Looking at pupil attendance figures to try and see if there are patterns and to ensure that less pupils truant. • Looking at exam results to try and find strategies to improve their target figures, etc • A head teacher in a school analysing those pupils who are falling behind in their work as evidenced by test results and whose attendance is poor so that interviews with parents can be arranged. 	2 2
17	<p>Any four well developed points from: Second mark for good example or expansion. <i>Features of good MIS</i></p> <ul style="list-style-type: none"> • Accuracy of the data • Flexibility of data analysis • Providing data in an appropriate form • Accessible to a wide range of users and support a wide range of skills and knowledge • Improve interpersonal communications amongst management and employees • Allow individual project planning • Avoid information overload • Allow speedy decisions for urgent situations <p>Examples of possible responses</p> <ul style="list-style-type: none"> • Accuracy of the information produced usually dependent on the accuracy of the data input. • Ability to allow managers to set up their own queries flexibly. • Presents the data in an appropriate form, for example a graph, to make it easy to understand. • Can be used by managers who have differing experience and skills in the use of ICT. • Ability to be transferred to other packages for further processing/analysis such as spreadsheet package. 	4x 2
18	<p>Any four well developed points from: Second mark for good example or expansion from:</p> <p><i>Factors which can lead to poor MIS</i></p> <ul style="list-style-type: none"> • Complexity of the system • Inadequate initial analysis • Lack of management involvement in initial design • Inappropriate hardware and software • Lack of management knowledge/training about computer systems and their capabilities • Poor communications between professionals • Lack of professional standards <p>Examples of possible responses</p> <ul style="list-style-type: none"> • Inadequate consultation with managers during the analysis of the system to find out what their requirements from the system are. • Lack of training for managers means many managers do not use the system as they should. • Inappropriate hardware or software being used. For example, the network may run slowly when processing the information needed when producing MIS reports. • Inadequate initial analysis. The system does not do exactly what it should do. 	4x 2



WJEC
245 Western Avenue
Cardiff CF5 2YX
Tel No 029 2026 5000
Fax 029 2057 5994
E-mail: exams@wjec.co.uk
website: www.wjec.co.uk