



GCSE MARKING SCHEME

**INFORMATION AND COMMUNICATION
TECHNOLOGY**

SUMMER 2014

INTRODUCTION

The marking schemes which follow were those used by WJEC for the Summer 2014 examination in GCSE 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.

	Page
Unit 1	1
Unit 3	11

INFORMATION AND COMMUNICATION TECHNOLOGY

UNIT 1: UNDERSTANDING ICT

Quest.	Answer	Max mark										
1(a)	<table style="display: inline-table; vertical-align: top; margin-right: 20px;"> <tr><td style="border: 1px solid black; text-align: center;">1</td></tr> <tr><td style="border: 1px solid black; text-align: center;">4 ✓</td></tr> <tr><td style="border: 1px solid black; text-align: center;">7</td></tr> </table> <table style="display: inline-table; vertical-align: top; margin-right: 20px;"> <tr><td style="border: 1px solid black; text-align: center;">2 ✓</td></tr> <tr><td style="border: 1px solid black; text-align: center;">5</td></tr> <tr><td style="border: 1px solid black; text-align: center;">8</td></tr> </table> <table style="display: inline-table; vertical-align: top;"> <tr><td style="border: 1px solid black; text-align: center;">3</td></tr> <tr><td style="border: 1px solid black; text-align: center;">6</td></tr> <tr><td style="border: 1px solid black; text-align: center;">9 ✓</td></tr> </table> <div style="border: 1px solid black; padding: 5px; margin-left: 20px; width: fit-content;"> <p><i>If tick all boxes no marks If tick more than one box in a row then no mark for that row</i></p> </div>	1	4 ✓	7	2 ✓	5	8	3	6	9 ✓	3	
1												
4 ✓												
7												
2 ✓												
5												
8												
3												
6												
9 ✓												
2(a)	<table style="display: inline-table; vertical-align: top; margin-right: 20px;"> <tr><td colspan="2" style="text-align: center;">Broadband</td></tr> <tr><td style="border: 1px solid black; text-align: center;">1 ✓</td></tr> <tr><td style="border: 1px solid black; text-align: center;">3</td></tr> <tr><td style="border: 1px solid black; text-align: center;">5</td></tr> </table> <table style="display: inline-table; vertical-align: top;"> <tr><td colspan="2" style="text-align: center;">Dial-up</td></tr> <tr><td style="border: 1px solid black; text-align: center;">2</td></tr> <tr><td style="border: 1px solid black; text-align: center;">4 ✓</td></tr> <tr><td style="border: 1px solid black; text-align: center;">6 ✓</td></tr> </table> <div style="border: 1px solid black; padding: 5px; margin-left: 20px; width: fit-content;"> <p><i>If tick all boxes no marks If tick more than one box in a row then no mark for that row</i></p> </div>	Broadband		1 ✓	3	5	Dial-up		2	4 ✓	6 ✓	3
Broadband												
1 ✓												
3												
5												
Dial-up												
2												
4 ✓												
6 ✓												
2(b)(i)	<p>One mark for any one of the following:</p> <p>Advantage Can use the computer / device to work anywhere within range Can work whilst on the move No wires Many devices can connect</p> <p>Disadvantage Hacking (if the network is not secure) Some areas cannot access wi-fi / lose signal / blackspots Runs down batteries quickly Interference / blocked signals</p> <p>Condome Health concerns NOT Portable</p>	2										
2(c)	<p>Provides super-fast Internet access to services Allows faster downloading Can access the Internet/games/shopping/emails much more quickly Allows greater access to services / remote areas Allow comparison between 3G and 4G service access</p> <p>NOT brand names of apps</p>	1										

Quest.	Answer	Max mark										
3(a)	<p>Accept any of the following:</p> <p>Tablet Mobile phone / Smart phone Games console Desktop PC Email server</p> <p>No brand names e.g. iPad, kindle fire NOT phone NOT mobile device</p>	1										
3(b)	Blind Carbon Copy / BCC	1										
3(c)	<p>Any three of the following:</p> <p>Faster than normal post/ quicker delivery Cuts down on mail costs – stamps/envelopes Record when sent / received / Read receipt Can be edited Saves paper – more environmentally friendly Send file attachments Electronic signatures in emails are now legal Can be encrypted for security Address book if qualified – e.g. you do not have to remember the email addresses Control over timing e.g. People can respond in their own time / People can respond instantly Can send an email from anywhere in the world as long as you have network / Internet access Traceable – can be traced if you misuse email</p> <p>NOT Can use on many devices NOT Can send to more than one person at the same time NOT “It’s faster” – must be qualified</p>	3										
3(d)	<p>Any three of the following:</p> <p>Phishing – you can receive a fake email impersonating a company Black hole syndrome – email never arrives Junk email/ spam Cyber bullying / inappropriate No work-life balance</p> <p>NOT hacking NOT viruses NOT need Internet access</p>	3										
4	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">True</th> <th style="width: 50%; text-align: center;">False</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">1 ✓</td> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">2</td> </tr> <tr> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">3</td> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">4 ✓</td> </tr> <tr> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">5 ✓</td> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">6</td> </tr> <tr> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">7</td> <td style="text-align: center; border: 1px solid black; width: 40px; height: 40px;">8 ✓</td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 10px; margin-top: 20px; width: fit-content; margin-left: auto; margin-right: auto;"> <p><i>If tick all boxes no marks If tick more than one box in a row then no mark for that row</i></p> </div>	True	False	1 ✓	2	3	4 ✓	5 ✓	6	7	8 ✓	4
True	False											
1 ✓	2											
3	4 ✓											
5 ✓	6											
7	8 ✓											

Quest.	Answer	Max mark									
5(a)	Student ID Code	1									
5(b)	To uniquely identify the player / to make each record unique / unique identifier / individual code	1									
5(c)	Thomas G / G Thomas	1									
5(d)	Report Graph / chart Mail merge Label printing Query	1									
5(e)	Text / string / alphanumeric NOT input mask NOT number	1									
5(f)	Any two of the following: Consistency of data (1) NOT less errors Easier to search (1) Faster to enter / faster to type (1) NOT faster on its own Saves memory / storage space (1) NOT space by itself NOT save space Security issue if qualified (1)	2									
5(g)	<p>One mark for each correct field and search criteria X2 One mark if both fields are correct but search criteria incorrect One mark if both search criteria are correct but fields are incorrect Search criteria must be spelt correctly NOT House Captains</p> <table border="1"> <thead> <tr> <th>Field</th> <th>Logical Operator</th> <th>Search Criteria</th> </tr> </thead> <tbody> <tr> <td>Role</td> <td>=</td> <td>House Captain</td> </tr> <tr> <td>Year Group</td> <td>=</td> <td>11</td> </tr> </tbody> </table>	Field	Logical Operator	Search Criteria	Role	=	House Captain	Year Group	=	11	2
Field	Logical Operator	Search Criteria									
Role	=	House Captain									
Year Group	=	11									
5(h)	<p>1 mark for name of validation and 1 mark for description (Can award second mark for sensible description if the first mark is not awarded)</p> <p>Format Check / Input mask (1) To ensure the Student ID Code is in a predefined layout / two letters and four digits / correct combination of characters (1)</p> <p>Length check (1) To ensure there are exactly six characters inserted</p> <p>Presence check (1) To ensure that this field has data entered into it/ To ensure this field has not been left blank.</p>	2									

Quest.	Answer	Max mark
6(a)	June	1
6(b)	B	1
6(c)	Absolute cell referencing (1) It fixes the value in the formula when replicated/fill down (1) Must have the 'fix' plus an action. Or E.g. All the replicated formulas in column H use the data in cell B1 (1)	2
6(d)	December	1
6(e)	Change of data/formula (1) Knock on effect of change (1) E.g. Save money on food (1) total cost goes down or balance goes up (1)	1 1
7	Examples must be distinctly different scenarios To achieve the mark there must be a resulting action or output device Temperature Light goes off on iron when at temperature Air conditioning will turn on when a certain temperature is reached Light Porch light comes on automatically when darkness falls Movement Game controller makes on screen tennis player respond Internal lights switch on when someone enters the room Pressure Balance board on a fitness game responds to changes in weight distribution Pressure sensor on the patio windows control an alarm Any reasonable answer NOT school or business related examples	4
8(a)	Any three of: <ul style="list-style-type: none"> • Ability to order goods 24/7 • Cost savings are passed to customers with cheaper goods • Allows disabled people to do their own shopping • No travelling costs needed as goods are ordered from home • No travelling time needed as goods are ordered from home • Online reviews • Greater choice of goods from a global marketplace • Online catalogues are more easily updated • Global marketplace means customers from around the world • Fluid pricing – easy to change prices from day to day • Low start-up and running costs compared to traditional stores • Can compare prices • Fewer staff needed NOT Can be delivered to your door unless qualified e.g. carrying heavy parcels	3
8(b)	Any two of: Hyperlinks / hypertext Search bars / keyword searches / search engine Hotspots Drop down lists / menus NOT categories on its own NOT search on its own	2

Quest.	Answer	Max mark
9(a)(i)	<p>One mark each for any one of:</p> <p>Yr 9/Yr12 option choices Registration Timetable software Examination entries SEN / Special Educational Needs Finance / Budget Inventory Library administration Behaviour Pupil progress (parents or staff) Pupil contact details Locate a pupil / teacher Spotting truancy/ attendance patterns Sending letters/newsletters to parents Medical needs Cafeteria administration Calendar School announcements</p> <p>Any reasonable answer</p> <p>NOT VLE specific e.g. accessing homework from home NOT anything instigated by the student</p>	1
9(a)(ii)	<p>Advantage:</p> <p>They reduce the workload for teachers They support managers decisions Help to plan timetables More efficient / up to date reporting More efficient tracking and monitoring Central access to data Can access 24/7</p> <p>Disadvantage:</p> <p>Software can be expensive to buy and maintain Cost of giving every teacher an administrator computer / putting a computer in every classroom for the teacher Staff training</p> <p>NOT general computer answers e.g. hacking, viruses, crashing</p>	2
9(b)(i)	<p>One mark for any 2 of the following input <u>devices</u>:</p> <p>Braille keyboard Virtual reality glove / helmets / thought headset Microphone Sip and puff pipes Touch Sensitive devices Foot mouse Tracker ball / roller ball / specialist mouse balls Joystick Pointing device Movement detection device</p> <p>Any reasonable answer Do NOT accept Webcam</p>	3

Quest.	Answer	Max mark
9(b)(ii)	<p>One mark for any 1 of the following software and 1 mark for description: Voice recognition software – user speaks into a device and the software converts into text/instructions Text to voice software – enables the computer to read typed text and gives a response.</p> <p>Examples are accepted instead of a description of how it works e.g. Voice recognition software – enters text into a word processor using the voice Text to voice software – visually impaired users – the software reads back what has been typed. Other answers are acceptable e.g. Control software to operate a Braille keyboard</p> <p>NOT just mention the type of disability for the how – needs a use or how it's used NOT projectors NOT software</p>	2
10(a)(i)	<p>Input: (1 mark for each <u>device</u>) Joystick Control pad Steering wheel Keyboard Mouse Microphone Camera / webcam Virtual reality devices Movement sensor</p> <p>Any control devices accepted NOT game control NOT game controller NOT games console NOT headset</p> <p>Output: (1 mark in total) Monitor / TV screen Speaker Motors / Gaming chair</p> <p>NOT headset</p>	3
10(a)(ii)	<p>Encourages teamwork Learning can be fun / Can be fun to play Encourages hand/eye coordination Increases levels of concentration Encourages fitness Can play with friends and family from all around the world / can make new friends Gives an idea of jobs in the future – games development</p>	2
10(a)(iii)	<p>Needs both the problem and cause</p> <p>Eye strain – from staring at monitor for too long (ONLY accept eye strain) RSI – Continuously pressing games controller Backache – Staying in the same position / not having an <u>adjustable</u> chair (NOT comfortable or suitable chair) Addiction – can't stop playing the game / effects school work / social isolation Headaches – screen is too bright Neck strain – for keeping your neck in the same position for too long</p> <p>1 mark for a list of two Do not give repeated problems or causes</p>	2

Quest.	Answer	Max mark
10(b)	<p>1 mark for each use x 2 5 marks for any suitable advantages and disadvantages For maximum marks – must have at least one advantage and one disadvantage Do NOT give repeated advantages or disadvantages</p> <p>Uses</p> <p>Social Networking: Upload photos Share videos/photos Comment on photos Write posts Join groups Create events Follow celebrities Chat / send instant messages</p> <p>Interactive Digital TV Voting on reality TV shows / favourite contestant Pausing live TV Catch-up TV Record shows Remote access to TV programmes Movies / sporting events on demand / pay per view Access Internet services e.g. shopping, email, social networking</p> <p>Webcam Services Viewing a place anywhere in the world Checking the weather in any part of the world Advertising e.g. self-promotion Video conferencing / video calling</p> <p>Accept any reasonable answer Do not accept brand names such as ‘Skype’</p> <p>Social Networking Advantages: Can keep in touch with friends all over the world Can let large groups know about events quickly (e.g. birth of a child) which takes less time than contacting each one individually Can make new friends based on interest groups Can vote on products/services to let others know your opinion Can see others opinions on products/services to help with choice Can save money on phone calls by using chat</p> <p>Disadvantages Paedophiles / Stalkers / groomers may gain access to the images Employers can view your comments and could lead to a dismissal Sharing too much information Burglars can see Holiday status updates Identity theft You can be identified from your images Exercising undue influence</p>	

Quest.	Answer	Max mark
	<p>Interactive Digital TV</p> <p>Advantages: View TV while browsing other channels so you don't miss your show Set up favourite channels that simplifies browsing Can view shows when you want to</p> <p>Disadvantages: Initial set up cost Increasing subscription cost Arguments who to vote for Lack of social interaction Interruption to signal</p> <p>Webcam Services</p> <p>Advantages: Reduces isolation by interaction with friends and family in real time Improves gaming experience in games which immerse player in environment Saves time by talking to groups (teleconference) of friends simultaneously</p> <p>Disadvantages: Poor connection/broadband speed Need to set up the software Demands on memory May need to buy a more expensive / faster / newer computer Poor quality images Need broadband Hacking – the webcam could be turned on without your knowledge Misuse of images captured - paedophiles</p>	<p>7</p>

Quest.	Answer	Max mark										
11	<p>8-10 marks Candidates give a clear, coherent answer fully and accurately describing the software that can be used and giving clear examples. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>4-7 marks Candidates describe some software that could be used and give limited examples but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-3 marks Candidates simply give a brief description of software that could be used with few or no examples The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p> <p>Guidance One mark for each software type (Max 5). Five additional marks for matching examples of use. To get full marks must have at least five different types of software and five matching examples.</p> <p>NO BRAND NAMES NOTE parts must match but do not penalise second if first part wrong <i>The example of use must be distinctly different</i></p> <table border="1"> <thead> <tr> <th>Software</th> <th>Example of use</th> </tr> </thead> <tbody> <tr> <td>Database</td> <td> Store details of participants in production / cast / roles / props / costumes / suppliers NOT just 'store data' NOT info NOT keep data safe </td> </tr> <tr> <td>Spreadsheets</td> <td> Profit/loss / how much money they make for the sale of tickets / produce a graph of income / profits / keep track of the money NOT just "accounts" </td> </tr> <tr> <td>Presentation software/ slideshow / multimedia software</td> <td> Make a presentation to advertise the production To create movies / animations to put in presentation on website / TV NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a presentation' <i>Must at least have a second part that is related to the production or presentation software e.g. advertise the production with animations and sound would be okay</i> NOT 'create presentation' needs qualification </td> </tr> <tr> <td>Web authoring/ Website creation</td> <td> Create / maintain website to advertise the production NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a website' <i>Must at least have a second part that is related to the production or website e.g. advertise the production with a website would be okay</i> NOT 'create website' needs qualification </td> </tr> </tbody> </table>	Software	Example of use	Database	Store details of participants in production / cast / roles / props / costumes / suppliers NOT just 'store data' NOT info NOT keep data safe	Spreadsheets	Profit/loss / how much money they make for the sale of tickets / produce a graph of income / profits / keep track of the money NOT just "accounts"	Presentation software/ slideshow / multimedia software	Make a presentation to advertise the production To create movies / animations to put in presentation on website / TV NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a presentation' <i>Must at least have a second part that is related to the production or presentation software e.g. advertise the production with animations and sound would be okay</i> NOT 'create presentation' needs qualification	Web authoring/ Website creation	Create / maintain website to advertise the production NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a website' <i>Must at least have a second part that is related to the production or website e.g. advertise the production with a website would be okay</i> NOT 'create website' needs qualification	
Software	Example of use											
Database	Store details of participants in production / cast / roles / props / costumes / suppliers NOT just 'store data' NOT info NOT keep data safe											
Spreadsheets	Profit/loss / how much money they make for the sale of tickets / produce a graph of income / profits / keep track of the money NOT just "accounts"											
Presentation software/ slideshow / multimedia software	Make a presentation to advertise the production To create movies / animations to put in presentation on website / TV NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a presentation' <i>Must at least have a second part that is related to the production or presentation software e.g. advertise the production with animations and sound would be okay</i> NOT 'create presentation' needs qualification											
Web authoring/ Website creation	Create / maintain website to advertise the production NOT just 'to advertise' - too general. NOT just 'to show advertising' NOT just 'to create a website' <i>Must at least have a second part that is related to the production or website e.g. advertise the production with a website would be okay</i> NOT 'create website' needs qualification											

Quest.	Answer		Max mark
	Photo editing software/ graphics software	Edit photos of the cast / Touch up pictures to improve them Create logos / images	10
	Desktop Publishing/DTP Software	Posters to advertise the production, leaflets for parents to inform them of the production, to create fliers, programmes	
	Email software	Email details to pupils/parents Contact pupils/parents NOT anything that could be word processing software e.g. letters	
	Audio / music software	To create a playlist for the play To create a podcast to advertise the play To create and edit sound effects for the play	
	Control software	To control lighting To control special effects	
	Video editing software	To record the play and edit the sequences Edit sequences in the play	
	Total		80

UNIT 3: ICT IN ORGANISATIONS

1a	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;">DEVICE</th> <th style="width: 33%;">INPUT</th> <th style="width: 33%;">OUTPUT</th> </tr> </thead> <tbody> <tr> <td>Scanner</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox" value="2"/></td> </tr> <tr> <td>Webcam</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox" value="4"/></td> </tr> </tbody> </table>	DEVICE	INPUT	OUTPUT	Scanner	<input checked="" type="checkbox"/>	<input type="checkbox" value="2"/>	Webcam	<input checked="" type="checkbox"/>	<input type="checkbox" value="4"/>	1 1	2			
DEVICE	INPUT	OUTPUT													
Scanner	<input checked="" type="checkbox"/>	<input type="checkbox" value="2"/>													
Webcam	<input checked="" type="checkbox"/>	<input type="checkbox" value="4"/>													
1b	<p>2 x 1 mark for an ICT device. 2 x 1 mark for correct input/output method. e.g. – Mouse + Input, Monitor (<u>Screen</u>/mobile phone <u>screen</u>) + Output Accept any suitable device. Gaming devices need to be qualified. NOT storage devices NOT <i>Scanner</i> or <i>Webcam</i> (already given in the previous question). NOT Mobile phone or any touch sensitive device for input.</p>	2 2	4												
1c	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 50%;">STATEMENT</th> <th style="width: 25%;">TRUE</th> <th style="width: 25%;">FALSE</th> </tr> </thead> <tbody> <tr> <td>A music clip stored in MP3 format would take longer to download than the same clip stored in the WAV format</td> <td><input type="checkbox" value="1"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Music files stored in the MP3 format are better quality than files stored in the WAV format</td> <td><input type="checkbox" value="3"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>MP3 files need to be decoded when used, which means they do not load as fast as some other formats</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox" value="6"/></td> </tr> </tbody> </table>	STATEMENT	TRUE	FALSE	A music clip stored in MP3 format would take longer to download than the same clip stored in the WAV format	<input type="checkbox" value="1"/>	<input checked="" type="checkbox"/>	Music files stored in the MP3 format are better quality than files stored in the WAV format	<input type="checkbox" value="3"/>	<input checked="" type="checkbox"/>	MP3 files need to be decoded when used, which means they do not load as fast as some other formats	<input checked="" type="checkbox"/>	<input type="checkbox" value="6"/>	1 1 1	3
STATEMENT	TRUE	FALSE													
A music clip stored in MP3 format would take longer to download than the same clip stored in the WAV format	<input type="checkbox" value="1"/>	<input checked="" type="checkbox"/>													
Music files stored in the MP3 format are better quality than files stored in the WAV format	<input type="checkbox" value="3"/>	<input checked="" type="checkbox"/>													
MP3 files need to be decoded when used, which means they do not load as fast as some other formats	<input checked="" type="checkbox"/>	<input type="checkbox" value="6"/>													
1d	Musical Instrument Digital Interface <i>Accept</i> MIDI	1	1												
1e	Sound signals are analogue (1), computers are only able to process digital signals (1) One is analogue the other is digital – 1 mark Must make it clear which is analogue/digital for 2 marks	2	2												
2ai	Animation	1	1												
2aii	Transition	1	1												
2aii	Hotspot	1	1												

2bi	<p>Any two of:</p> <ul style="list-style-type: none"> • They ensure corporate <u>house style</u>/ consistency throughout the slideshow • They ensure consistent <u>navigation</u> • <u>Saves time designing</u> the slideshow/ they supply the structure/ layout of the slideshow • <u>Saves time producing</u> each the slides/ all the developer has to do is to fill in their own content • Helps <u>novice</u> users produce a slideshow. <p>NOT faster/easier by itself NOT 'saves time' by itself -needs qualification. NOT just 'professional ' , must qualify why</p>	1 1	2																
2bii	<p>Any one of:</p> <ul style="list-style-type: none"> • Technical difficulties or lack of sufficient hardware / can require a lot of memory • People concentrate more on the presentation than what the presenter is saying /people get distracted by animations • Compatibility issues with software versions • Can lead to poor delivery techniques <p><i>Condone</i> "Death by PowerPoint"</p> <p>NOT hard to use/ requires training. NOT 'costs' by itself must be very well qualified NOT must have a computer</p>	1	1																
3a	<p>Accept only Command line /CLI Graphical User Interface / GUI NOT WIMP NOT Windows</p>	1 1	2																
3b	<table border="1"> <thead> <tr> <th>APPLICATION</th> <th>MENU DRIVEN</th> <th>VOICE DRIVEN</th> <th>BIOMETRICS</th> </tr> </thead> <tbody> <tr> <td>Retina scanning to gain access to a high-level security room</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Making a cash withdrawal at an Automated Teller Machine</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">5 <input type="checkbox"/></td> <td style="text-align: center;">6 <input type="checkbox"/></td> </tr> <tr> <td>Using your mobile phone hands free</td> <td style="text-align: center;">7 <input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">9 <input type="checkbox"/></td> </tr> </tbody> </table>	APPLICATION	MENU DRIVEN	VOICE DRIVEN	BIOMETRICS	Retina scanning to gain access to a high-level security room	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input checked="" type="checkbox"/>	Making a cash withdrawal at an Automated Teller Machine	<input checked="" type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	Using your mobile phone hands free	7 <input type="checkbox"/>	<input checked="" type="checkbox"/>	9 <input type="checkbox"/>	1 1 1	3
APPLICATION	MENU DRIVEN	VOICE DRIVEN	BIOMETRICS																
Retina scanning to gain access to a high-level security room	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input checked="" type="checkbox"/>																
Making a cash withdrawal at an Automated Teller Machine	<input checked="" type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>																
Using your mobile phone hands free	7 <input type="checkbox"/>	<input checked="" type="checkbox"/>	9 <input type="checkbox"/>																

3ci	<p>Any one of:</p> <ul style="list-style-type: none"> • Portable music players/ MP3 player • Notebook computers • POS screens • Learning aids/concept keyboards • Tablet screen • ATM screen • Satellite navigation systems/Sat. Nav. screen • Public information consoles • PRS <p>Any reasonable answer but must be a device</p> <p>NO brand names NOT 'computer' by itself</p>	1	1
3cii	<p>Any two of:</p> <ul style="list-style-type: none"> • Save space as no keyboard or mouse is required. • Prevents theft of mice and keyboards. • Easy to learn / intuitive./ Easy to use (must be qualified e.g.as the user simply touches what they see on the display / don't need to learn commands) • Touch screens allow faster data entry • Touch screens have easier hand eye coordination than mice or keyboards / enables the disabled if qualified • Touch screens are durable in public access and in high volume usage. <p>NOT 'easier' , 'faster' unless well qualified.</p>	1 1	2
3ciii	<p>Any one of:</p> <ul style="list-style-type: none"> • Difficult for people with accessibility issues e.g. visually impaired /no feedback • Can be easily damaged/scratched • Dirty screens difficult to read • Users must be within arm's reach of the display • It is difficult to select small items/buttons • User's hand may obscure the screen • Screens need to be installed at a lower position and tilted to reduce arm fatigue • Some reduction in image brightness may occur • They cost more than alternative devices • Gloves / wet fingers prevent data entry 	1	1

4a	Any three of: <ul style="list-style-type: none"> • Zoom • Selection • Transforming • Sizing/enlarge/reduce size • Crop • Copying • Moving • Cloning • Brush settings • Layering 	<ul style="list-style-type: none"> • Red-eye <u>removal</u> • Spot clearing • Skew • Rotate • Distortion • Colour palette • Contrast • Brightness • Text Accept any reasonable answer	1 1 1	3
4b	<ul style="list-style-type: none"> • Vector graphics can be enlarged without loss of quality • Can edit individual parts of a grouped object • Smaller file sizes • Faster to download/upload. NOT 'less space'	1 1	2	
5	1 mark for any one of the following to a max. of five. <ul style="list-style-type: none"> • Scan barcode / product is scanned - must have idea of scanning • Lookup price / match in database / displays or gets price on bill / display price on screen NOT just 'recognises it' • Deduct one from stock level / number of items bought are deducted / NOT just 'stock number updated' - must have idea of reduction • Compare number in stock with re-order level / restock level. If re – order level / restock level reached then..... / gets to a certain level / goes below a certain number NOT just 'when stock gets low' • Automatic re-order / computer re-orders / NOT automatically sends a warning to manager • Updates stock totals when new stock arrives 	5	5	
6a	A story board is a plan/design – 1 mark Any one of: Frame-by-frame Comic book Scene-by-scene Detailing key elements Sequence/order of events	1 1	2	

6b	<p>1 mark for naming each animation techniques below x 2 2 marks for each explanation of how it could be used x 2</p> <p><u>Key frame / Tweening (1)</u> The animator could draw the start and end points / key frames (1) of the car and allow the computer to generate the in-between frames. (1)</p> <p><u>Stop motion / Claymation / Flip books(1)</u> The animator could use a car model and move it a small amount each time between taking photographs (1). When you play the pictures/frames back it appears as if the car is moving. (1)</p> <p><u>3D animation(1)</u> The animator could use layering effects (1) Combining the layers builds up to create a more realistic/complex animation. (1)</p> <p><u>Rotoscoping (1)</u> Photograph or film a real-life car driving (1) and: tracing each frame to create a life like motion / cartoon like appearance. (1)</p> <p><u>Onion skinning (1)</u> The animator could make previous frames visible (1) to help plan the next frame (1) to give a smoother animation. (1)</p> <p><u>Cloning (1)</u> an object/frame is duplicated (1) and it is altered/edited (1)</p>	2 4	6
7a	<p>1 mark for problem 1 mark for solution Problem: <u>One letter</u> colour codes could be confusing, e.g. B = Black or Blue Limited choice of colour (coarsening of data) NOT just don't know what the letters stand for but allow if this is clarified in their solution. NOT 'don't understand the code'</p> <p>Solution: Use codes with <u>more than one letter</u>, e.g. BLA = Black, BLU = Blue etc. Use codes such as LBL = Light Blue, etc. Solution must match the problem.</p> <p>Accept examples with different codes as long as they are sensible, e.g. K=Black and B=Blue, or BA=Black and BU=Blue, or B1=Black and B2=Blue NOT different coloured text e.g. blue in blue text and black in black text.</p>	1 1	2

7b	<p>Any advantages/ disadvantages from: Must have at least one of each for full marks.</p> <p>Advantages</p> <ul style="list-style-type: none"> • Data is easily shared between users/ collaborative working • Data is easily transferred using networks • Data is faster to back-up / can keep backup copies offsite • Faster to search for data • Faster to sort data • Faster to perform complex calculations • Data can be edited more easily • (Different) reports can be produced • “Environmental issues” must be qualified • Data can be encrypted / password protected <p>NOT just 'more secure'</p> <p>NOT Less physical storage space needed (already given in the question)</p> <p>Disadvantages</p> <ul style="list-style-type: none"> • Loss of data / corrupted data <u>due to hardware/communications failure</u> • Reliance on networks - network failures • Training needed to enable staff to access data • Spreading of a virus/loss of data due to virus • Hacking <p>NOT Cost</p> <p>NOT power failure unless qualified</p>	4	4												
8a	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">STATEMENT</th> <th style="width: 25%;">TRUE</th> <th style="width: 25%;">FALSE</th> </tr> </thead> <tbody> <tr> <td>An operating system is a type of hardware</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>An operating system ensures that data is written to the backing store correctly</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">4 <input type="checkbox"/></td> </tr> <tr> <td>A computer will not work unless it has an operating system</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;">6 <input type="checkbox"/></td> </tr> </tbody> </table>	STATEMENT	TRUE	FALSE	An operating system is a type of hardware	1 <input type="checkbox"/>	<input checked="" type="checkbox"/>	An operating system ensures that data is written to the backing store correctly	<input checked="" type="checkbox"/>	4 <input type="checkbox"/>	A computer will not work unless it has an operating system	<input checked="" type="checkbox"/>	6 <input type="checkbox"/>	1 1 1	3
STATEMENT	TRUE	FALSE													
An operating system is a type of hardware	1 <input type="checkbox"/>	<input checked="" type="checkbox"/>													
An operating system ensures that data is written to the backing store correctly	<input checked="" type="checkbox"/>	4 <input type="checkbox"/>													
A computer will not work unless it has an operating system	<input checked="" type="checkbox"/>	6 <input type="checkbox"/>													
8b	Real-time Transaction NOT just real-time Batch Processing / Batch	1 1	2												

9a	<p>Any two of:</p> <ul style="list-style-type: none"> • View account balances • Open savings account • Apply for overdraft • Apply for a mortgage • Apply for a credit card • View recent transactions • Download bank statements, for example in PDF format for printing • View images of paid cheques • Order cheque books • Order replacement cards • Transfer funds between the customer's accounts • Pay third parties, including bill payments (see, e.g., BPAY) and telegraphic/wire transfers • Investment purchase or sale • Loan applications and transactions • Management of multiple users having varying levels of authority • Set-up/cancel direct debits/standing orders • Change personal details • Upgrade/downgrade account • Foreign exchange currency • Online help <p>NOT an advantage must be a service Any reasonable answer</p>	1 1	2
9b	<p>Any two of:</p> <ul style="list-style-type: none"> • Available 24/7 NOT just 24/7 • Online promotions e.g. Higher interest rates for savings accounts / Lower interest rate loans etc. • Save <u>travel time</u> going to bank / saves <u>queuing time</u> in a bank/ faster access to services • Save <u>travel costs</u> • Increased market awareness - visit all the banks and find out what interest rates they offer online. • Empowers the disabled • Faster to <u>set up</u> online account transfers • Global access/ banking on the go <p>NOT 'can do it from home'/'can do it from the comfort of your own home'/'saves you having you to go to the bank'/'no queues' NOT services</p>	1 1	2
9c	<p>Any one of:</p> <ul style="list-style-type: none"> • The closure of small, local branches or reductions in opening hours • The security of online banking, specifically hacking and credit card fraud. • Identity fraud • Lack of human interaction • Forget their passwords 	1	1

10a	Working from home using a network/ internet Condone Working from home using ICT	1	1
10b	Any two of: <ul style="list-style-type: none"> • No expenses for travelling to work • No time wasted commuting • Employees do not have to relocate for their work / can live anywhere • Convenient for people with a disability • No need for long journeys / traffic / stressful commutes • Work can be fit around family commitments • Employees can choose their own hours 	1 1	2
10c	Any two of: <ul style="list-style-type: none"> • Fewer backup staff needed e.g. Cleaners • Staff less likely to spend time off work sick • Less office furniture needed • Less office space needed • Reduced office overheads (gas, electricity, office premises) • Staff may be more productive if they can chose their own hours / work from the comfort of their own home • Employers are not restricted to a local workforce 	1 1	2
10d	Any one of: <ul style="list-style-type: none"> • Reduced traffic congestion • Fewer greenhouse emissions / helps reduce global warming • Less air pollution / noise pollution • Helps sustain rural communities • Prosperity is spread across UK not just in cities 	1	1

11a	<p>Any one of:</p> <p>Robotics</p> <ul style="list-style-type: none"> • Car production <ul style="list-style-type: none"> ○ Spot welding ○ Assembling parts e.g. fitting windscreens ○ Paint spraying ○ Testing engine timing and emissions using sensors • Any others example e.g. Deep sea exploration, Bomb disposal, Bionics <p>Expert Systems</p> <p><u>Medical Expert Systems</u></p> <ul style="list-style-type: none"> • Diagnose a patients illness • Give medical advice/ allows self-diagnosis • Give doctors a second opinion • Give advice on treatment • Example of a use e.g. an expert system was designed to identify bacteria causing severe infections, such as bacteria and meningitis, and to recommend antibiotics. <p><u>Other expert systems</u></p> <p>Any other example e.g. Matching people to jobs /Diagnosing faults in car engines / Legal advisory systems /Training on oil rigs, Mineral prospecting / Oil exploration / technical help lines.</p>	1	1
11b	<p>Any one of:</p> <p>Robotics</p> <ul style="list-style-type: none"> • Sensors <p>or Expert Systems</p> <ul style="list-style-type: none"> • Type in answers to questions / multiple choice/Web cam or video/ Touch screen / microphone(voice recognition) 	1	1

11c	<p>Any two advantages (not use) :</p> <p>Robotics</p> <ul style="list-style-type: none"> • Repetitive tedious jobs are done to the same consistent standard • Can work 24 hours a day 365 days a year • Can work in dangerous places • Can work in unhealthy places • Can be quickly taught new skills by changing the program or a human taking them through the motions of a new skill • Do not need to have a heated or lit environment saving on utility costs • Saves on employment costs <p>or Expert Systems</p> <ul style="list-style-type: none"> • The computer can store far more information than a human. It can draw on a wide variety of sources such as stored knowledge from books case studies to help in diagnosis and advice • The computer does not 'forget' or make mistakes • Data can be kept up-to-date • The expert system is always available 24 hours a day and will never 'retire' • The system can be used at a distance over a network / rural areas or even poorer third world countries have access to experts • Provides accurate predictions with probabilities of all possible problems with more accurate advice • Some people prefer the privacy of talking to a computer • Gives the security of a second opinion • Can self-diagnose so avoids waiting time/ if can't get an appointment 	1 1	2
-----	--	--------	---

11d	<p>Any one disadvantage of:</p> <p>Robotics</p> <ul style="list-style-type: none"> • Initial expensive development costs • Unemployment due to many assembly line jobs now being done by robots / loss of human jobs • Possible need for extra space / new technology to accommodate robots • Cost of maintenance/running costs • Staff training to set up or use robots • Limited functionality • Lack of common sense. Robots do not react quickly to situations they have not been programmed to deal with. <p>or Expert Systems</p> <p><i>Disadvantages of medical</i></p> <ul style="list-style-type: none"> • Over reliance upon software • Initial expensive development costs • Some doctors could be de-skilled by over dependence upon computer advice • Fewer medical staff could be needed • Lacks the 'human touch' – lack of personal contact/empathy/ No human available if do not know what to do • Lacks human senses e.g. see a rash, hear a cough, smell a wound • GIGO/ dependent upon the correct information being given. If data or rules wrong the wrong advice could be given / not 100% accurate/ lack of common sense 	1	1
-----	--	---	---

12	<p>6 - 8 marks Candidates give a clear, coherent answer fully and accurately identifying crimes or offences outlining consequences and describing different measures to minimise or prevent. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>3 - 5 marks Candidates identify crimes or offences, outline consequences and may describe different measures to minimise or prevent, but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1 - 2 marks Candidates may only name one crime or offence and give a brief mention of consequences or prevention. 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 one mark for each misuse and one mark for each suitable example one mark for each <u>different</u> consequence one mark for each <u>different</u> prevention plus a further mark for more detailed description</p> <p>Misuse + Example</p> <ul style="list-style-type: none"> • Hacking (1) e.g. into another person private email account (1) • Blackmail (1) e.g. demand money to not reveal private computer data (1) • Spreading viruses (1) e.g. to destroy data / hardware / e.g. deliberately emailing a virus to everyone in contacts list (1) • Cyber bullying (1) e.g. sending a nasty message by text (1) • Phishing (1) e.g. to send an email to give over your personal bank account details (1) • Software piracy (1) e.g. illegal music or video downloads (1) • Creation of websites (1) e.g. to incite violence or racism (1) • Fake websites (1) e.g. to steal money (1) • Identity theft (1) e.g. to falsify passports using ICT (1) • Trolling (1) e.g. anonymous posting of provocative statements about a person to cause offence. <p>Condone one crime committed under the Data Protection Act e.g. Crime : Holding data longer than is necessary. Example: A businessman is denied a visa to visit another country because of a minor theft crime when a child.</p> <p>Any reasonable answer</p> <p>Consequences (Do not give repeated consequences. Consequences need to match crime/offence given)</p> <ul style="list-style-type: none"> • loss of money • health issues / stress / suicide / depression • embarrassment / loss of reputation • loss of data • unusable computer • work harassment • prosecution / imprisonment / fine 		
----	---	--	--

	<p>Prevention (Do not give repeated preventions. Preventions must be suitable to stated crimes/concerns).</p> <ul style="list-style-type: none"> • id's passwords • encryption • physical security • code of conduct • monitoring network • firewall • anti-virus software/ don't open unknown emails • restrict individual access/ ISP blocking / disconnect from internet • privacy settings/ reporting procedures • parental controls 		
			80



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