



GCSE MARKING SCHEME

SUMMER 2018

**INFORMATION & COMMUNICATION TECHNOLOGY
UNIT 3: ICT IN ORGANISATIONS
4333/01**

INTRODUCTION

This marking scheme was used by WJEC for the 2018 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was 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 conference was to ensure that the marking scheme was 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' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

GCSE INFORMATION & COMMUNICATION TECHNOLOGY

Unit 3: ICT in Organisations

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1a	<table border="1"> <thead> <tr> <th>Device</th> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td><i>Picture of projector</i> Projector</td> <td align="center"><input type="checkbox"/></td> <td align="center"><input checked="" type="checkbox"/></td> </tr> <tr> <td><i>Picture of mouse</i> Mouse</td> <td align="center"><input checked="" type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> </tr> <tr> <td><i>Picture of printer</i> Printer</td> <td align="center"><input type="checkbox"/></td> <td align="center"><input checked="" type="checkbox"/></td> </tr> <tr> <td><i>Picture of speakers</i> Speakers</td> <td align="center"><input type="checkbox"/></td> <td align="center"><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Device	Input	Output	<i>Picture of projector</i> Projector	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Picture of mouse</i> Mouse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Picture of printer</i> Printer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Picture of speakers</i> Speakers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	
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		1																
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		1																
			4															
1b	<p>1 mark for each of the following up to a maximum of 2 devices and 2 correct I/O:</p> <p>Scanner - Input Keyboard - Input Screen / Monitor - Output Microphone – Input Web camera – Input not digital camera / camera Condome joystick / controller – Input only Graphics tablet – Input Headphones - Output</p> <p>Accept any reasonable answer. Do not accept any device that is named in 1a. Do not accept any device that is both input and output. Do not accept projector, mouse, printer, speakers</p>	2 2	4															

2a	<p>1 mark for each of the following up to a maximum of 2</p> <p>Data can be kept more securely (if justified). Data can be accessed more quickly / faster searches Back-ups can be easily made. Data can be changed easily. Data can be transferred / shared easily Processing large amounts of data is much faster on a computer (sorting and calculations) Different reports / output formats can be produced Saves on paper / environmental friendly (if justified) Data can be accessed from many different places / devices Reduced need for staff Increased reliability of data due to validation / verification</p> <p>Do not accept less storage space.</p>	<p>1 1 1 1 1 1 1 1 1</p>	2
2b	<p>1 mark for each of the following up to a maximum of 2</p> <p>Can't be the reverse of 2a</p> <p>Cost of equipment can be high. Staff training. Security issues / hacking / viruses. Health risk Data corruption Removal of specific tasks could lead to job losses (must be qualified) Environmental issues (must be justified)</p> <p>Not increased use of paper</p>	<p>1 1 1 1 1 1 1</p>	2

3a	<p>A Bookmark is a link from one part of a presentation to another. A JPEG is a type of image file. A Video is a collection of moving pictures.</p>	1 1 1	3				
3b(i)	A hotspot is a graphical hyperlink / a picture with a link / image link NOT wireless hotspot	1	1				
3b(ii)	A transition is an animation / effect that occurs when moving from one slide to another.	1	1				
3c	<p>One mark for each with a maximum of 3 advantages and 3 disadvantages.</p> <p>Not software can crash, transitions</p> <table border="1"> <thead> <tr> <th>Advantages</th> <th>Disadvantages</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> i. Easy to standardise slide using templates./ Consistent house style. / Quicker to develop. / Helps novice user produce a slide show. ii. Presentation can be saved digitally. iii. Easy to edit/change order of slides. iv. Special effects / animations / music / video to hold attention v. A presentation can run automatically. vi. Output to many platforms </td> <td> <ul style="list-style-type: none"> i. Training is required. ii. Technical issues / corruption / requires a lot of memory / Compatibility issues. iii. People concentrate on the presentation and not what is being said. iv. Difficult to annotate slides during a presentation. v. Poor delivery techniques. vi. "Death by PowerPoint" vii. Too much time spent on presentation design <u>to the detriment of content.</u> viii. Requires a lot of memory / Lot of storage / High download and upload times </td> </tr> </tbody> </table>	Advantages	Disadvantages	<ul style="list-style-type: none"> i. Easy to standardise slide using templates./ Consistent house style. / Quicker to develop. / Helps novice user produce a slide show. ii. Presentation can be saved digitally. iii. Easy to edit/change order of slides. iv. Special effects / animations / music / video to hold attention v. A presentation can run automatically. vi. Output to many platforms 	<ul style="list-style-type: none"> i. Training is required. ii. Technical issues / corruption / requires a lot of memory / Compatibility issues. iii. People concentrate on the presentation and not what is being said. iv. Difficult to annotate slides during a presentation. v. Poor delivery techniques. vi. "Death by PowerPoint" vii. Too much time spent on presentation design <u>to the detriment of content.</u> viii. Requires a lot of memory / Lot of storage / High download and upload times 		6
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4(a)		Name of feature	Purpose		
	A	Back button	To go to the previous page	2	
	B	Refresh button	To re-load the current page / restart the page / refresh the page / update the page (e.g. online auction site / email)	2	
	C	URL box / bar Or Address box / bar	To enter the URL / web address of the web page you want to visit Displays the web page you are on	2	
	D	Search box / bar	To make keyword searches / type in exactly what they want to search for	2	
	Not "tab"				8
4(b)	Golden triangle Not Gold triangle			1	1
5a	1 mark for each of the following Keyframes are used as <u>start and end points (1)</u> for the animation. The computer creates <u>(1) the in-between (tweening) frames (1)</u> .				3
5b	Onion skinning is the process of keeping <u>previous frames visible (1)</u> in order to make decisions on how to <u>create or change the next frame (1)</u> based on the previous image in the sequence.				2
5c	Persistence of vision is where the human eye / retina / brain continues to see an image for a short period of time after the image has moved/ Or			1	
	The process by which the eye is fooled into thinking that still pictures are moving.			1	1
5d	Rotoscoping is where an image is <u>drawn / traced around (1)</u> . Gives a <u>cartoon like / life-like (1)</u> appearance.				2

6a	<table border="1"> <thead> <tr> <th>Statement</th> <th>True</th> <th>False</th> </tr> </thead> <tbody> <tr> <td>A standard format for compressed video files is MPEG.</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>.wav files cannot be compressed.</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>A compressed file will be transmitted faster over a network.</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	Statement	True	False	A standard format for compressed video files is MPEG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	.wav files cannot be compressed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A compressed file will be transmitted faster over a network.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	3
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6b	<p>One mark for each of the following up to a maximum of four.</p> <p>Copy Paste Move Select Transform / Distortion / Rotation Flip Resize / Scale / Enlarge Clone / duplicate Move</p> <p>Not: Creating, shape, autoshape, crop</p>	1 1 1 1 1 1 1	4												
6c	<p>One mark only.</p> <ul style="list-style-type: none"> The decompression process can drain memory and processing resources. Decompression takes time. Compressed files open more slowly than uncompressed files. Potential loss of quality / data can be lost Security issues (if justified) e.g. a compressed file can hide a virus Compression utilities can be proprietary. 	1 1 1 1 1	1												

7a	<p>One mark for each of the following up to a maximum of two.</p> <p>Knowledge database is far more capable of remembering than a human is / won't forget</p> <p>Expert system unlikely to get facts wrong.</p> <p>Doesn't retire.</p> <p>Simulations to help train new mechanics</p> <p>Easier to keep up to date</p> <p>Using the expert system for a second opinion</p> <p>Available remotely</p> <p>Can store far more information than a human</p> <p>Easier to diagnose faults</p> <p>The garage may require less mechanics</p> <p>Condone The expert system is available 24/7 (NOT just 24/7)</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	2
7b	<p>One mark for each of the following up to a maximum of two.</p> <p>Initial cost</p> <p>Ongoing costs / costs for keeping system up to date</p> <p>Over-reliance / de-skill mechanics / Garage might fail to meet agreed times if machine breaks / Reduced rate of production</p> <p>Expert systems have no common sense / Not intuitive / Could reduce production of system breaks / Does not adapt well to ambiguous problems</p> <p>GIGO</p> <p>Need for training</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	2
8a	<p>One mark for each of the following up to a maximum of two.</p> <p>Menus</p> <p>Pointers</p> <p>Help features</p> <p>Tutorials</p> <p>Change icon size</p> <p>Change mouse settings</p> <p>Change resolution</p> <p>Change brightness</p> <p>Not windows or icons.</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	2
8b	<p>One mark for each of the following</p> <p>Command Line Interface / CLI</p> <p>Menu Driven Interface</p> <p>Touch Sensitive Interface / Voice driven interface / Biometric interface</p>	<p>1</p> <p>1</p> <p>1</p>	3

9a	Parity checking	1	1
9b	Automatic check to ensure data in <u>sensible / reasonable./ within range</u> One mark for naming the type and field One mark for the parameter Types from Check digit, Format check, Length check, Lookup table, Type check, Presence check, Range check, Type check, Hash total, Batch total For example: Range check - Age must be between 18 and 99	1 1 1	3
10a	<u>Description (Max of 3 marks)</u> <ul style="list-style-type: none"> • Packet switching is when <u>data is broken down</u> • Into manageable packets to be <u>sent over a network / Internet / sent using a switch/ over different routes</u> • Packets contain source address / destination address / re-assembly information / packet number / checksum • Data collisions occur when two packets are detected simultaneously • <u>Missing packets are re-sent.</u> • Computers wait a random amount of time before attempting to resend the packet • <u>Reassembled</u> at the end 	1 1 1 1 1 1 1	3
10b	1 mark for naming topology up to a maximum of two. Bus / Line Network Ring Network Star Network Accept Mesh but not expect	 1 1 1	2

10c	<p>One mark for each of the following up to a maximum of four. At least one mark from each.</p> <p>Advantages of networks over standalone systems</p> <ul style="list-style-type: none"> • Share programs / software • Share data files/ collaborative working • Share peripherals / hardware e.g. printers and scanners • Electronic mail /internet • Central backup • Easier to monitor users • Centrally controlled security / Administration / All PCs can be controlled from one • Site (software) licences are likely to be cheaper than buying several standalone licences. • No need to always work on the same computer / access data from any machine on the network <p>Disadvantages</p> <ul style="list-style-type: none"> • If the network is down there may be no access to files / software • Hacking – unauthorised access • Spreading viruses easier • White collar computer fraud easier • Managing a large network is complicated / requires training to maintain a network / a network manager usually needs to be employed. • COST: Purchasing the network cabling and file servers can be expensive / Cost of extra software / staff to maintain network / Expensive to set up and maintain. (Not just 'expensive') 		4
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11a	<p>Accept any reasonable answer up to a maximum of 1 mark per 2 jobs</p> <p>Jobs created by ICT</p> <ul style="list-style-type: none"> • Programmers / Software engineer • System analyst • Data manager • ICT technician • App developer • Web developer • Hardware designer • ICT / Computer Science Teachers • Social Media Manager <p>Jobs lost due to ICT Warehouse staff</p> <ul style="list-style-type: none"> • Production line • Marking multiple choice exams • Printing industry • Lift operator • Office jobs e.g. filing clerks / typists • Cashiers / stock control / sales staff • Bank staff • Cinema staff • Library staff 		2
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11b	<p>Indicative content</p> <p>One mark for the same issue given positively and negatively</p> <p>Positive impact on environment (Up to a maximum of 4 marks)</p> <ul style="list-style-type: none"> • Data is stored digitally and therefore saves on the use of paper that saves forest resources/Data is communicated electronically and therefore saves paper that saves forest resources. • Videoconferencing / teleworking saves on travel which reduces emissions that lead to global warming. • Modelling scenarios for the benefit of the environment. E.g. Traffic flow. • Automation with lighting/heat to reduce the use of energy and therefore carbon dioxide. • Monitoring environmental conditions/pollution – reduce the use of vehicles on certain days/not build a bus station in an area where there’s currently high level of pollution. • Use of GPS to make journeys more efficient which will lead to a reduction in greenhouse gasses. <p>Negative impact on environment (Up to a maximum of 4 marks)</p> <ul style="list-style-type: none"> • Increased energy/electricity. The emissions from the power stations creating this energy can have a negative impact on global warming. • Disposal of old ICT equipment (e-Waste) contributes to more waste in landfills and more harmful elements in the environment. • Increased heat from using ICT equipment leads to the need for air conditioning which leads to increased use of energy that can have a negative impact on global warming. • Mining of rare elements / minerals. • Increased pollution from manufacturing processes. <p>7-8 marks Candidates give a clear, coherent answer fully and accurately describing positive and negative impacts on the environment. They use appropriate terminology and accurate spelling, punctuation and grammar.</p> <p>4-6 marks Candidates give some description of positive and negative impacts on the environment, but responses lack clarity. There are a few errors in spelling, punctuation and grammar</p> <p>1-3 marks Candidates give at least one positive and negative impacts on the environment. The response lacks clarity and there are significant errors in spelling, punctuation and grammar.</p> <p>0 marks No valid response.</p>		8
			80