



Mark Scheme (Results)

Summer 2018

Pearson Edexcel International GCSE

In Information and Communication
Technology (4IT0) Paper 1

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1	C	(1)

Question Number	Answer	Mark
2	C	(1)

Question Number	Answer	Mark
3	A	(1)

Question Number	Answer	Mark
4	D	(1)

Question Number	Answer	Mark
5	D	(1)

Question Number	Answer	Mark
6	C	(1)

Question Number	Answer	Mark
7	B	(1)

Question Number	Answer	Mark
8	C	(1)

Question Number	Answer	Mark
9	D	(1)

Question Number	Answer	Mark
10	B	(1)

Question Number	Answer	Mark
11	C	(1)




Question Number	Answer	Mark
12	A	(1)

Question Number	Answer	Mark
13	B	(1)

Question Number	Answer	Mark
14	A	(1)

Question Number	Answer	Mark
15	B	(1)

Question Number	Answer	Mark
16	A	(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark						
17(a)		Device Name Webcam <table border="1" data-bbox="1093 349 1563 512"> <tr> <td>Input</td> <td>✓</td> </tr> <tr> <td>Output</td> <td></td> </tr> <tr> <td>Input and output</td> <td></td> </tr> </table>	Input	✓	Output		Input and output		1 mark for name and 1 mark for tick for each device.	
	Input	✓								
	Output									
Input and output										
	Device Name Printer <table border="1" data-bbox="1093 647 1563 817"> <tr> <td>Input</td> <td></td> </tr> <tr> <td>Output</td> <td>✓</td> </tr> <tr> <td>Input and output</td> <td></td> </tr> </table>	Input		Output	✓	Input and output				
Input										
Output	✓									
Input and output										
	Device Name Joystick <table border="1" data-bbox="1093 975 1563 1144"> <tr> <td>Input</td> <td></td> </tr> <tr> <td>Output</td> <td></td> </tr> <tr> <td>Input and output</td> <td>✓</td> </tr> </table>	Input		Output		Input and output	✓			
Input										
Output										
Input and output	✓									

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(b)(i)	Microphone (1)			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(b)(ii)	Any one from: <ul style="list-style-type: none"> • Speakers (1) • Headset / head phones / earphones (1) 			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(b)(iii)	DVD / CD / Blu-ray (1)			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(b)(iv)	Flash (memory) / EPROM (1)			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(c)	Any two from: <ul style="list-style-type: none"> • Bluetooth (1) • WiFi (1) • Infrared / IR (1) • NFC (1) • ZigBee (1) 			(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(d)(i)	Application(s) software (1)			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(d)(ii)	Any one from: <ul style="list-style-type: none"> • Utility (programs / software) (1) • (Hardware) drivers (1) 			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(d)(iii)	<p>Any explanation from:</p> <ul style="list-style-type: none"> • Anti-virus software uses a database of known viruses to check against (1) new viruses must be added to the database to keep the system secure (1) • New viruses are being developed / altered to defeat anti-virus software (1) anti-virus software must (be updated/patched to) be able to prevent this / protect the computer (1) • New viruses are continually being developed (1) anti-virus software must (be updated/patched to) be able to identify the (new) viruses (1) 			(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(e)	<p>An explanation such as:</p> <p>It is the speed of the (computer) processor / speed at which data is processed / speed of processing / speed of calculation /clock speed / indicates how fast the CPU can run (1)</p> <p>indicates how many instruction (cycles) / (clock) ticks / (clock) cycles per second (1)</p>		Award 2 marks for clock cycles per second	(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
17(f)	An explanation such as: <ul style="list-style-type: none">• ROM is permanent / RAM is temporary / volatile (1)• If in RAM program / data lost when computer switched off / not lost in ROM (1)			(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(a)(i)	Any one from: <ul style="list-style-type: none"> • (Bar code) scanner (1) • Bar code reader (1) 			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(a)(ii)	Any two from: <ul style="list-style-type: none"> • Data input will be more accurate / reduces (chance of) human error (1) leading to more accurate stock control/information (1) • Transactions can be carried out faster/data input is faster (1) reduces the number of checkouts needed/reduces number/cost of staff needed / reduces queues (1) • Price changes can be made instantly (1) because there is no need to change the prices on individual items (1) 	Answers relating to updating stock – this can be achieved by manual data entry		(4)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(a)(iii)	Touch screen			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(b)	An explanation such as: Need fewer operators (1) reducing costs/wages/increased profits (1)			(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark																
18(c)	<p>Award 3 marks for 5 correct answers, 2 marks for 3 correct answers and 1 mark for 1 correct answer.</p> <table border="1"> <thead> <tr> <th>Steps</th> <th>Order</th> </tr> </thead> <tbody> <tr> <td>Bar code input</td> <td>1</td> </tr> <tr> <td>Current stock calculated</td> <td>5</td> </tr> <tr> <td>Item identified</td> <td>2/3</td> </tr> <tr> <td>Current stock compared to reorder level</td> <td>6</td> </tr> <tr> <td>One item deducted from current stock</td> <td>4</td> </tr> <tr> <td>Information sent to database</td> <td>2/3</td> </tr> <tr> <td>Order placed for new stock</td> <td>7</td> </tr> </tbody> </table> <p>Additional Guidance Item identified and Information sent to database may be either 2 or 3. These must be different.</p>	Steps	Order	Bar code input	1	Current stock calculated	5	Item identified	2/3	Current stock compared to reorder level	6	One item deducted from current stock	4	Information sent to database	2/3	Order placed for new stock	7			(3)
Steps	Order																			
Bar code input	1																			
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Current stock compared to reorder level	6																			
One item deducted from current stock	4																			
Information sent to database	2/3																			
Order placed for new stock	7																			

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(d)(i)	<p>Any three from:</p> <ul style="list-style-type: none"> • Check the stored information is correct with the customer / (periodically) ask the customer to check/update their information (1) • Set the system to only accept valid data/information / example of validation check given (1) • Ask for/use additional evidence (check customer information against documentation) / use verification (1) • Use automated system to select/complete address from postcode (or similar) (1) • Restrict data entry e.g. use of drop down menus (1) • Get customer to input the data (themselves) (1) 			(3)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
18(d)(ii)	Any three from: <ul style="list-style-type: none"> • Must be kept secure (1) • Processed fairly / lawfully (1) • Obtained fairly / lawfully (1) • Processed in accordance with rights of data subject (1) • Data must be kept only as long as necessary (1) • Data must be shown to subjects on request (1) • Must specify the purpose for holding the data / use only for the specified purpose (1) • Must be adequate / not excessive (1) • Cannot transfer to countries with less protection (1) • Cannot share without authority (1) 	Accurate and up to date	MP 10 – must include sensible authority e.g. customer/legal	(3)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
19(a)	Any one of: <ul style="list-style-type: none"> • Router (1) • Modem (1) 			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
19(b)	Any one of: <ul style="list-style-type: none"> • IP Address (1) • MAC address (1) • Allocated (device) name (1) 			(1)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
19(c)(i)	Any two from: <ul style="list-style-type: none"> • (Wireless connection) is easier to set up / install (1) • The laptop can be moved around/used in different areas within the home without losing connection (1) • There is no need for/no restriction from wires connecting laptop to router (1) • Lack of trailing wires (1) 			(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
19(c)(ii)	<p>Any two from:</p> <ul style="list-style-type: none"> • Are more susceptible to unauthorised access/less secure (1) • Signal can be subject to interference from e.g. walls/physical barriers/other (wireless) devices/sources (1) • May lose bandwidth over a long range (1) • Have less bandwidth than wired connections (1) • Less stable/reliable than wired connections (1) 	<p>Wired connection 'Stronger' 'Faster' without justification</p>	<p>MP2 must include what causes the interference</p>	(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
19(c)(iii)	<p>An explanation such as: Encryption makes the data (transmitted across the network) unreadable/scrambled/coded (1) (so that it cannot be read) by anyone without a key (1)</p>	<p>Data is encrypted Password / passcode for key</p>		(2)

Question Number	Answer	Do not accept	Additional Guidance	Mark
19(d)	<p>An explanation based on any four of:</p> <ul style="list-style-type: none"> • Games have lots of graphics/video / are large files (1) • Graphics / Video / Games take up a lot of storage space / RAM (because they are large files) (1) • Larger RAM allows HR graphics (1) • RAM temporarily holds data and instructions for the game (1) • Large RAM means less swapping with the hard disk / accessing a DVD (1) • RAM provides faster access to graphics / video / data / faster load (than a hard drive) (1) • Helps games / video run smoothly / reduces lagging / reduces buffering' (1) 	<p>Large RAM helps games/ video run smoothly / improves quality without an explanation of 4th or 5th bullet point</p>		(4)

Question Number	Indicative content	Mark
19(e)	<p>Indicative content for a discussion about advantages and disadvantages of downloading compared with streaming Students may assume that advantages of one are disadvantages of the other</p> <p>Advantages of Downloading:</p> <ul style="list-style-type: none"> • Can be shared (maybe copyright issues) • Can view whenever and wherever user wants / repeatedly • Can keep the files for as long as they want • May be able to edit • Don't need to have internet access once saved <p>Disadvantages of Downloading:</p> <ul style="list-style-type: none"> • Entire video must be downloaded before you can start viewing • Must be saved on user's computer system • Often very large files which means large storage capacity needed <p>Advantages of Streaming:</p> <ul style="list-style-type: none"> • Don't have to store the files on computer, therefore can be used on devices with small storage capacity • Can start watching as soon as streaming begins • Files are saved in temporary storage as they are streamed to improve quality and access and deleted as soon as they finish <p>Disadvantages of Streaming:</p> <ul style="list-style-type: none"> • Must view when being streamed / cannot view video later • Need internet access when viewing • Rely on good signal / high bandwidth • Quality may be affected by buffering 	

Level	Mark	Descriptor
	0	No rewardable material.
1	1-2	A limited number of advantages and/or disadvantages are identified some of which are appropriate The response may provide a limited expansion of at least one advantage and/or disadvantage The response may focus on either advantages or disadvantages The response will lack clarity and organisation
2	3-4	A number of advantages and disadvantages are identified most of which are appropriate Expansions are provided for some of the advantages and/or disadvantages identified Advantages and disadvantages will be discussed but the discussion may not be balanced The response will shows some focus but may not be well organised
3	5-6	A range of relevant advantages and disadvantages are identified Detailed expansions are provided for most of the advantages and disadvantages identified There is a balanced discussion The response shows good focus and organisation

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
20(a)	<p>Any three from:</p> <ul style="list-style-type: none"> • No access to the Internet / IT facilities (1) • May not be IT literate (1) • May be concerned about bogus websites (1) • Don't have to pay postage / delivery charge (1) • May be worried about damage in post (1) • Can get goods immediately (1) • Can physically see / feel goods / check goods for quality / ensure it is the correct item / check is what she is expecting (1) • Sales advice available (1) • Enjoys the 'shopping experience' / prefers face-to-face service (1) • Prefers to pay by cash / may not have a bank account / card (1) 	Security of personal information – given in question		(3)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
20(b)(i)	Any three from: <ul style="list-style-type: none"> • Can order 24/7 / when store is closed (1) • No queuing (1) • Ability to search for items (1) • Know instantly if in stock (1) • Wider range of retailers / stock available / some items only available on line (1) • Online discounts / special online offers (1) • Easy to compare prices with other retailers (1) • Can receive goods out of normal shopping hours (1) 	Answers relating to leaving home / travelling to store – given in question		(3)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
20(b)(ii)	<p>Any two from:</p> <ul style="list-style-type: none"> • Look for padlock / Verisign / colour of the address bar (1) (browser) shows that the website is secure / is using encryption (1) • Look for HTTPS (1) shows that the website is using encryption / is secure / safe (1) • Don't enter personal information when using public / open WiFi 'eg' coffee shop (1) as it is not a secure connection (1) • Check if the site is where you expect to go (1) by checking the URL of the site (1) 			(4)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
20(c)	Any two from: <ul style="list-style-type: none"> • contrast (theme) (1) • screen resolution (1) • display settings / brightness (1) • font size / icon size (1) • use magnifier / zoom in (1) • on-screen keyboard (enlarged) (1) • calibrate colour / colour scheme / setting (1) • blinking cursor (1) • focus rectangle (1) • windows border (1) • mouse settings e.g. pointer / trails (1) 	Narrator or speech recognition facilities – given in the question Hardware solutions		(2)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark	
20(d)	<p>Award 1 mark each up to a maximum of 2 for each health problem and 1 mark for linked solution.</p> <p>No mark for solution if problem not identified</p>	Regular breaks or headaches – given in question			
	Backache (1)	<p>Any one from:</p> <ul style="list-style-type: none"> • Ergonomic / adjustable furniture (1) • Adjust seat angle / height (1) • Adjust screen height (1) • Lumbar adjustment / (1) • Foot rests / back support (1) • Correct posture (1) 			Bad eyesight
	RSI/Carpel tunnel (syndrome) (1)	<p>Any one from:</p> <ul style="list-style-type: none"> • Wrist rests / support / gel pad (1) • Ergonomic keyboard / mouse (1) • Correct posture (1) 			

(4)

	Eye strain / eye problems (1)	Any one from: <ul style="list-style-type: none">• Suitable lighting (1)• Use a screen filter / anti-glare screen (1)• Adjust brightness / contrast (1)• Make sure screen is a suitable height and distance from seat (1)• Focus on distance objects (1)			
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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
21(a)	<p>Any two explanations from:</p> <ul style="list-style-type: none"> • A shared area can be set up in which documents can be saved (1) allowing others to access / edit / comment on the documents (1) • Version control can be maintained (1) to ensure that all users are working on the same version of the document (1) • Only authorised users will be able to access the shared area / files (1) so security is ensured (1) • (As they are working on the same network), users will have access to the same software (version) (1) no compatibility issues (1) • Will be able to use network / internal chat facilities / communication software to communicate (1) to discuss / raise issues about the project / share links / websites (1) 	Communicate without internet access	MP 5 – must have reference to network chat facility / communication software	(4)

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
21(b)	<p>Any three from:</p> <ul style="list-style-type: none"> • They can access the forum whenever they have internet access / do not have to be logged in to the college network (1) • They can select who has access to the forum / invite people to join (1) • Discussions can be archived for future reference (1) • Users can receive notifications of new posts / comments (1) • It organises the discussions into threads, (making them easier to follow/read) (1) • Can have discussions with multiple participants/students / the group (1) • Messages can be read by / commented on by other members of the group (1) 			(3)

Question Number	Indicative content	Mark
21(c)	<p>Positives</p> <ul style="list-style-type: none"> • Can find answers to a wide range of questions • Wide variety of sources – anyone can publish / can add to content published by others • Content can be published by individuals / organisations from around the world • May avoid censorship / biased reporting • Immediacy of information • Information is constantly updated • Allows collaboration / discussions with others • Tools can be used within online workspaces to help create ideas, model solutions and solve problems • The relative importance of information can be decided by the person publishing the information – not by formal editors who may have bias etc • Accessible to all who have ICT facilities • Availability of newspapers / magazine from around the world <p>Negatives</p> <ul style="list-style-type: none"> • The amount of information is so vast that it can be overwhelming / difficult to extract key information • Users have to spend a time to determine <ul style="list-style-type: none"> ○ what is relevant ○ what is accurate ○ whether the source is valid / appropriate / biased / creditable • Those without ICT are unable to add to or benefit from the availability of the information – a contribution to the digital divide • The information may be blocked / censored / amended in certain countries • False information may gain unwarranted credence • Difficulty in processing extracting key aspects of content • Increased collection of personal data leads to extra needs for vigilance • Availability of (age) inappropriate or upsetting material 	(6)

Level	Mark	Descriptor
	0	No rewardable material.
1	1 - 2	A limited number of positives and/or negatives are identified some of which are appropriate The response may provide a limited expansion of at least one positive and/or negative The response may focus on either positives or negatives The response will lack clarity and organisation
2	3 - 4	A number of positives and negatives are identified most of which are appropriate Expansions are provided for some of the positives and/or negatives identified Positives and negatives will be discussed but the discussion may not be balanced The response will shows some focus but may not be well organised
3	5 - 6	A range of relevant positives and negatives are identified Detailed expansions are provided for most of the positive and negative identified There is a balanced discussion The response shows good focus and organisation