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Mark Scheme (Results)

Summer 2023

Pearson Edexcel International GCSE
In Information and Communication Technology (ICT) (4IT1) Paper 01

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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.

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Question Number	Answer	Mark
1ai	Any one from: • Sharing a connection to mobile broadband • Connecting to the Internet via a smartphone/hotspot **Do not accept** responses that only refer to sharing a connection to the Internet. Responses must imply the Internet connection is via mobile broadband.	**(1)**

Question Number	Answer	Mark
1aii	C	**(1)**

Question Number	Answer	Mark
1b(i)	Any two from: • Connects devices within a single site (e.g. a [single] building) • Covers a smaller geographical area/range • Does not use third party infrastructure/telecomms systems • Does not require a gateway **Accept:** A WAN is a collection of LANs	**(2)**

Question Number	Answer	Mark
1b(ii)	A description such as: To provide a wireless **connection** (1) to a network (1)	**(2)**

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Question Number	Answer	Mark
1biii	B	**(1)**

Question Number	Answer	Mark
1c	Any two from: • Lower costs / no need for building rent/utilities etc • Greater employee productivity • Greater employee wellbeing • Easier to recruit new employees **NB:** If a benefit to the employee is given and a benefit to the employer can be inferred then award the mark.	**(2)**

Question Number	Answer	Mark
1d	Any two from: • Bluetooth • Wi-Fi • Infra-red / IR • Near-field communication / NFC	**(2)**

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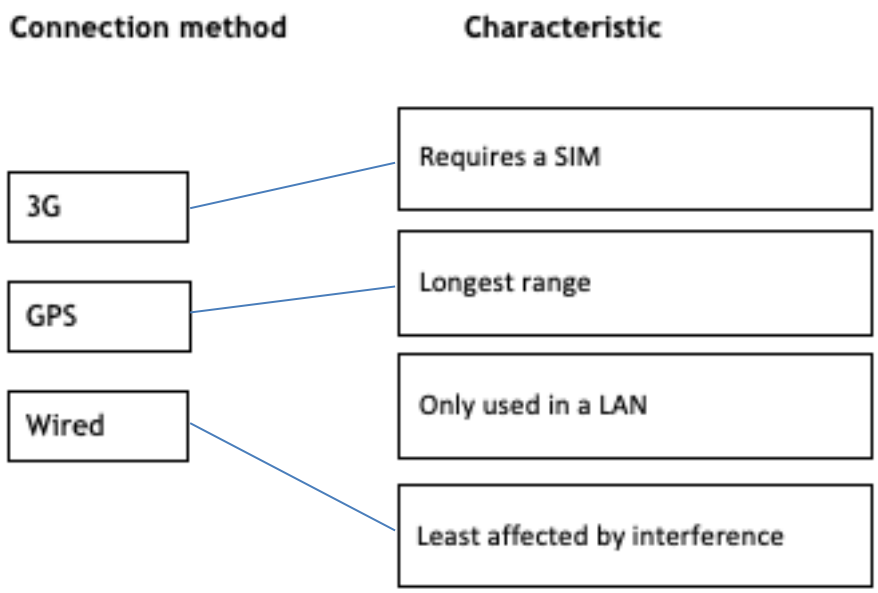
Question Number	Answer	Mark
1ei	Award **one** mark for each correct line, up to a maximum of **three** marks. Ignore clearly crossed out lines and credit replacement if correct. Do not award lines between boxes where a box has more than one line. **Correct answer:**  	**(3)**

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Question Number	Answer	Mark
1eii	Any one from: • (Signal) delay/lag • The time taken for data/packets to be sent (between devices in a network)	**(1)**

Question Number	Answer	Mark
1f	A description such as: • It provides access to a private LAN (1) from a remote location (1) • Provides an encrypted connection to a LAN (1) using the infrastructure of a public network (e.g. the Internet) (1) Allow responses that describe the uses of a VPN, e.g. • To hide/mask/change (1) the IP address / location (of a device) (1) • To allow access (1) to geo-blocked content (1) • To prevent others from tracking (1) (a user's) internet activity / location (1)	**(2)**

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Question Number	Answer	Mark
1g	Two descriptions such as: • Viruses (1) **spread** malicious code/software (through a host) (1) • Spyware (1) records user actions/keystrokes (1) • Adware (1) displays unwanted adverts/pop-ups (1) • Worms (1) replicate **independently** / **without a host file/program** (1) • Trojans (1) trick users by appearing to be legitimate / installs (other) malware (1) • Ransomware (1) locks a system / prevents user from accessing data / demands a payment (1) Accept examples (e.g. keylogger for spyware)	**(4)**

Question Number	Answer	Mark
1h	An explanation such as: • A filter will prevent access to blocked URLs / sites (1) so the family does not see inappropriate/unwanted web content (1) OR • An **email** filter will prevent unwanted content/spam (1) so that family members do not receive nuisance/time-wasting content (1)	**(2)**

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Question Number	Answer	Mark
2ai	A linked description to include: One mark for a condition / process: • If a car/object/pedestrian is close (1) One mark for an output: • Actuator output (or result of): Applies the brakes / changes direction / vibrates the steering wheel • Audio/visual output: Sounds an alarm / Displays a warning **NB:** A mark should only be awarded for an output when it is linked to an appropriate condition. e.g. 'Notify the driver when it is time to refuel' would be awarded 0 marks.	**(2)**

Question Number	Answer	Mark
2aii	C	**(1)**

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Question Number	Answer	Mark
2b	Any one from: • 3,200,000 • 3.2 million • 3.2×10^6	**(1)**

Question Number	Answer	Mark
2c	Any one from: • Social media • Transaction tracking • CCTV • Mobile phone network / triangulation **Accept:** Accelerometer / motion sensor (in a smartphone / smartwatch / pedometer / wearable fitness device etc.)	**(1)**

Question Number	Answer	Mark
2di	C	**(1)**

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Question Number	Answer	Mark
2dii	• **Each set** of file blocks together (and no additional/missing blocks per file) *Does not have to be in alphabetical order, so could be: A1A2C1C2C3B1B2D1D2* • **All** free space blocks **together** (at least three free blocks) **Allow follow through on MP2:** e.g. if added A3, B3, C4, D3, then award mark for MP2 if three free blocks are together, rather than used to separate files	**(2)**

Question Number	Answer	Mark
2diii	Any one from: • Solid State • SSD • Memory card • USB drive/stick **Accept:** Flash **Do not accept:** • 'USB' on its own • 'USB hard drive'	**(1)**

Question Number	Answer	Mark
2div	B	**(1)**

Question Number	Answer	Mark
2dv	Any two from: • (Fast) access/transfer speeds • durability	**(2)**

Question Number	Answer	Mark
2dvi	A	**(1)**

Question Number	Answer	Mark
2e	D	**(1)**

Question Number	Answer	Mark
2fi	D	**(1)**

Question Number	Answer
2fii	Increased cost

Question Number	Answer	Mark
2g	C	**(1)**

Question Number	Answer	Mark
3a	Any two from: • People can be tagged • People can be alerted • People can rate/like the photograph • People can (re-)share the content to their friends more easily • People can comment on the photograph	**(2)**

Question Number	Answer	Mark
3b	D	**(1)**

Question Number	Answer	Mark
3c	A description such as: • Cookies/transactional data can be used to store/read data about photographs/content/users viewed previously (1) so that similar/related photographs/content/users are shown/suggested (1)	**(2)**

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Question Number	Answer	Mark
3d	A linked explanation to include two from: • Reduces load on local hardware (1) because photo editing is processing intensive (1) and processing is done by remote servers (1) OR • Makes collaboration easier (1) because file location can be shared/accessed (1)	**(2)**

Question Number	Answer	Mark
3e	C	**(1)**

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Question Number	Answer	Mark
3fi	A linked explanation such as: Data will not be lost / does not have to be sent/requested multiple times (1) because signal strength increases the closer you are to the WAP (1) **Award** explanations phrased in the opposite, e.g.: Data may have to be sent/requested again (1) because signal strength reduces the further away you are from the WAP (1) **Do not accept:** • Reference to speed/latency (as this is a repeat of the question) • 'Strength of the connection' for 'signal strength' • Reference to interference being reduced as a result	**(2)**

Question Number	Answer	Mark
3fii	An explanation to include two from: (The data transfer would be) quicker (1) because there is less data to transfer / less bandwidth required (1) because the file size is reduced (1)	**(2)**

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Question Number	Answer	**Mark**
3g	A linked explanation such as: • More users will use the website / the website will be easier to use (1) • …because [reference to accessibility features / accessibility requirement] / …because it is a legal/ethical/moral/financial/business requirement (1)	**(2)**

Question Number	Answer	Mark
3hi	Any two from: • HTTPS • WEP • WPA • SSL	**(2)**

Question Number	Answer	**Mark**
3hii	It scrambles/encipher the data (using a key/cipher) Accept 'encodes' for 'encipher'. **Do not accept:** reference to 'unreadable'.	**(1)**

Question Number	Answer	Mark
3hiii	An explanation to include two from: • It is a second form of authentication (1) because the code is sent to this device that only she should possess / should only be accessible to her (1) as a way of verifying her identity (1) **Accept:** It prevents unauthorised users from making payments (1) because **Camille** must approve it (1)	**(2)**

Question Number	Answer	Mark
4a	Any one from: • They could use renewable energy • Put them in colder countries/locations • Do not 'autoplay' video content in web pages.	**(1)**

Question Number	Answer	Mark
4bi	• Screen / Monitor • Speakers / Headphones	**(2)**

Question Number	Answer	Mark
4bii	B	**(1)**

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Question Number	Answer	Mark
4c	An explanation such as: • Learners might miss important content (1) because they can be distracted (from the video content) (1) • Learners might be misled/confused (1) if the comments present inaccurate/unreliable/biased information (1)	**(2)**

Question Number	Answer	Mark
4di	An explanation such as: • Use of the term 'global' rather than 'uk' (1) because this would make the results more relevant (1) • 'Past hour' could be altered to a longer period of time / 'today's' could be altered to 'annual' (1) because the results are too recent (1) [given changes in temperature would need to span longer periods of time]	**(2)**

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Question Number	Answer	Mark
4dii	A description to include two linked points: • Appropriate device (1) (e.g. microphone, braille keyboard, eye tracker) • An accessibility need that the device supports (1) • How the device supports the accessibility need (1) Examples of two-mark responses: • Users with limited mobility (MP2) can enter search terms with speech to text (MP3) • A braille keyboard (MP1) supports users with visual impairments (MP2) • An eye tracker (MP1) converts eye movements to key strokes (MP3) • Users with limited vision (MP2) can hear results through text to speech (MP3)	**(2)**

Question Number	Answer	Mark
4e	A description to include two from: • People can talk/chat / work to a common goal / coordinate with other players / work as a team • …to develop collaboration/communication skills OR • People can talk/chat/communicate with others / work to a common goal / coordinate with other players / work as a team • …to develop collaboration skills **Award one mark max for a response such as:** 'players *communicate* with each other, which develops *communication* skills.'	**(2)**

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Question Number	Indicative content
4f	Expert opinion vs layperson opinion (depth) Range of sources (breadth) Verification (accuracy) International / multicultural (context) Under-representation of some cultures/contexts (bias)

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Level	Mark	Descriptor (AO3 – Discuss)
	0	**No rewardable material.**
1	**1-3**	A limited number of points will be identified, which may only support one point of view. At least one point will have evidence to support it. The discussion will have few (if any) links to the scenario. There may be a conclusion but this is likely to be a simple statement. The response will lack clarity and organisation.
2	**4-5**	A range of points will be identified, which compare different points of view, though the discussion may be unbalanced. Some points will be supported by evidence. The comparisons will include links to the scenario but may include some generic points. A conclusion will be included, which will link with the comparison, though the link may be implicit. The response will show some focus but may not be well organised.
3	**6-8**	The discussion compares a range of different points of view. Most points will be supported by evidence. The majority of the discussion will link to the scenario. A conclusion will be given that clearly links to the comparisons made in the discussion. The response will show good focus and organisation.

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Question Number	Answer	Mark
5a	Any two from: • Microphone • Touch-pad / touch-screen • Motion sensor • Camera **Do not accept** types of controller, e.g. 'joystick'.	**(2)**

Question Number	Answer	Mark
5b	Any two from: • Encryption • Antivirus / antimalware • File management • Disk management • Compression • Disk cleanup • Backup	**(2)**

Question Number	Answer	Mark
5c	Router	**(1)**

Question Number	Answer	Mark
5d	1) Network ID 2) Host/Device ID	**(2)**

Question Number	Answer	Mark
5e	A linked explanation such as: • Limit how much information you put online / use privacy settings (1) because then other users cannot see your location / use information maliciously (1) • Block malicious users (1) because then they cannot access your/your friends' information (1) • Report malicious users (1) because this protects others from risk (1) • Install firewall / anti-malware / use secure (https) sites / VPN (1) because it protects access to personal information (1) • Do not make friends with strangers (1) because people can misrepresent who they are online (1) **Do not accept:** responses related to safety of the devices	**(2)**

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Question Number	Answer	Mark
5f	Two explanations, each to include **two** linked points such as: • A loss of communication/shared understanding (1) because of increased isolation / loss of social/face to face interaction with colleagues (1) • The team will work less / be less productive (1) because they can get distracted more easily (1) • Job losses / time needed to learn new skills (1) because some workers may not be familiar with online tools / working (1) **Award:** responses to include two marks from: There may be a negative impact on the team's health/productivity (1) because they may work beyond their scheduled hours (1) because the Internet is accessible at any time (1)	**(4)**

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Question Number	Indicative content
5g	• How ICT makes it easier to plagiarise • How ICT makes plagiarism easier to find • The impact of plagiarism on victims • The impact of plagiarism on Camille • The wider impact on society of plagiarism

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Level	Mark	Descriptor (AO3 – Discuss)
	0	**No rewardable material.**
1	**1-3**	A limited number of points will be identified, which may only support one point of view. At least one point will have evidence to support it. The discussion will have few (if any) links to the scenario. There may be a conclusion but this is likely to be a simple statement. The response will lack clarity and organisation.
2	**4-5**	A range of points will be identified, which compare different points of view, though the discussion may be unbalanced. Some points will be supported by evidence. The comparisons will include links to the scenario but may include some generic points. A conclusion will be included, which will link with the comparison, though the link may be implicit. The response will show some focus but may not be well organised.
3	**6-8**	The discussion compares a range of different points of view. Most points will be supported by evidence. The majority of the discussion will link to the scenario. A conclusion will be given that clearly links to the comparisons made in the discussion. The response will show good focus and organisation.

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