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Mark Scheme (Results)

November 2020

Pearson Edexcel International GCSE in Information and Communication Technology (ICT)

(4IT1/01R) Paper 01 (TimeZone)

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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.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

  i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear
  ii) select and use a form and style of writing appropriate to purpose and to complex subject matter
  iii) organise information clearly and coherently, using specialist vocabulary when appropriate.

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1a	Any **two** from: • Can test/try products • Fewer security issues • No need to be ICT literate • Personal interaction with staff			**(2)**

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

Question Number	Answer	Mark
1c	D	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1d	Two descriptions such as: • Flash memory has no moving parts (1) so it is suited for use in portable devices (1) • Flash memory has less capacity (for same cost) (1) so not suitable for data-intensive uses (e.g. large backups) (1) • It is non-volatile / can store data when no power is present (1) so can be used for secondary storage / to store permanent changes to data (1) • It has fast access times (1) making it suitable for applications where load time is important (1) • It has low power consumption (1) making it suitable for battery powered devices (1)		In each description: - Award one mark for a characteristic. - Award one mark for how the characteristic affects the use of the type of memory	**(4)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1e	An explanation such as: Programs will load more slowly / Fewer applications can be open at the same time (1) as they are more reliant on being read from secondary storage / virtual memory / HDD / SSD (1) which has slower read/write times than RAM (1)			**(3)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1f	**Two** explanations such as: • Digital devices should be properly processed/recycled (not placed in landfill) (1) so dangerous chemicals/toxins cannot leak into water supplies / so cannot be ingested by humans / so cuts cannot be caused (1) • Batteries should be removed / not thrown in bin (1) so they do not catch fire / create a risk of burns (1)		Only award both marks for a single response if points are connected to human health, not just general or related to environmental damage alone	**(4)**

Question Number	Answer	Mark
1g	A	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1h	Award 1 mark for each: • Multiplying by 8 (for converting bytes to bits) • Multiplying by 1024 (for bytes in KiB) – but **not** 'sight of' • Power 3 on 1024 **or** 1000 (1024^3 **or** 1000^3) **NB:** All 3 marks can only be awarded if a complete expression is given: 64 x 1024^3 x 8 that includes 1024 to power 3 (or 1024x1024x1024), with each component multiplied.		Award equivalent expressions.	**(3)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1i	Any **two** from: • Fewer education opportunities • Fewer work opportunities • Increased social interaction • Less awareness of news/information/entertainment • Fewer distractions from work/education • Reduced access to goods • No access to online services (such as government systems etc.)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2a	Any **two** from: • Prolonged use • Lack of ergonomic input device • Poor posture / Sitting too close			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2b	A drawing that shows: • Gateway / Router • Appropriate connectivity identified (e.g. Wi-Fi, Ethernet, Bluetooth, USB)	'Wireless' for mark point 2.		**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2c	**Two** descriptions such as: • shared peripherals (1) means reduced cost/time to access a central one (1) • shared data (1) allows easier collaboration (1) • flexible access (1) allows hot desking (1) • shared access to the Internet (1) reduces need for individual connectivity (1) Allow 1 mark for 'communication'	'Access to the Internet' (without mention of 'shared access…')	Award two marks max for a list of benefits without uses described.	**(4)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2d	A description such as: Produce results (1) by **comparing/matching** information entered by user (1) OR Allows users to find information (1) based on the criteria they enter (1)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2e	**Two** linked explanations from: • To get new features (1) that increase the challenge/enjoyment/experience (1) • The current version does not work (1) because the operating system/hardware/her friends' version may have changed (1) • To fix/patch bugs (1) because they stop it working properly (1) • To protect against new security vulnerabilities (1) because new threats are always being created (1)			**(4)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2f	A description such as: • Update could include malware (1) which could compromise her data (1) OR • May not be compatible with her system (1) so it won't work / have to revert to previous version (1)			**(2)**

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

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

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3aii	A description such as: It decreases the time it takes for data to be transferred between devices (1) meaning his voice/video is in sync with other people on the call (1) Accept: The reverse (if high latency referred to)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3aiii	Any **three** from: • (Increased) distance • Not using a wired connection • (Increased) interference • Physical blockages • More devices on the network • More open applications	Decreasing interference	Accept examples of blockages / interference (e.g. 'walls' / 'other signals')	**(3)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3b	A description such as: To store/retrieve (files) (1) that can be sent/requested/accessed by other computers (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3c	Any **two** descriptions from: • No control of user access rights (1) reduces security (1) • No centralised administration (1) means no remote updates (1) • No centralised backup (1) so each client has to be backed up separately (1) • …so individual backup devices need to be used on each device (1) costing more (1) • No shared software (1) meaning more installs (1) • No shared storage / file access (1) increasing need for storage on each device / access from anywhere (1) • No roaming profiles (1) meaning users cannot 'hot-desk' (1)	'save time' for any second mark point		**(4)**

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Question Number	Answer	Mark
3d	**One** from: • IP address • Computer name	**(1)**

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

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3f	Any **one** from: • The phone uses GPS for this • The phone uses signals from satellites			**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3g	A description to include two from: Toner (1) is attracted to the paper (using an electrostatic charge) (1) and fused to the paper using heat (1)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4a	**One** from: • Wiki • Blog • Website • Forum			**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4b	Representing someone else's ideas/work as your own	'Stealing' work etc.		**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4c	A description to include **four** from: Users can, at their own pace, (1) access an assignment set by a teacher (1) tagged under a subject/topic (1) discuss it with other students/educators (1) in forums/groups/comments (1) view multimedia (1) and upload their work (1) and get feedback/marks (1)		A linked description required for more than two marks.	**(4)**

Question Number	Answer	Mark
4d	D	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4e	A description to include **three** from: A VPN uses tunnelling (1) to provide an encrypted connection (1) to a private LAN (1) using the infrastructure of a public network like the Internet (1)			**(3)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4f	Any **two** from: • At least eight characters • No repeating characters • **Mix** of case • No dictionary words/names • Uses special characters • Not including personal information			**(2)**

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

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Question Number	Indicative content
4h	Candidates should compare different points of view, giving evidence for each one. The response should include a conclusion. The indicative content is not exhaustive/prescriptive and students should be credited for other relevant content. Benefits • More time with friends/family due to reduced need to travel • Use of notifications means can plan diary and use time more efficiently • More facilities to socialise so reduces loneliness • Cashless systems reduce risk to individuals (robbery) • More opportunities to engage with creative arts from otherwise distant sources • Can stay closer to friends / family because do not need to move to where employment/education is Drawbacks • More time online means more time doing things as an individual rather than with others • Inconvenience if no connectivity • Less movement and activity due to overuse of digital devices (e.g. gaming / smartphones) and subsequent negative impact on health • Immediacy of information makes people less patient • Isolation from real communities as people move to online gaming/social communities / virtual worlds

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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	Do Not Accept	Additional Guidance	Mark
5a	An explanation such as: He could lose money (if someone uses his card without authorisation) (1) because payments are not secured / authentication (e.g. a PIN) is not required (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5b	**Two** explanations such as: • A DVD may not hold enough data (1) and additional data may need to be downloaded (1) • The DVD-R is not writable (1) and the game may need to save progress (1) • DVDs have slow access times (1), which make game loading times longer (1)			**(4)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5c	A description to include **four** from: Faster processors fetch/decode/execute more instructions/data / have more cycles (1) per second (1), so: ...graphics render more quickly / at greater resolution (1) making the visuals smoother / ...graphics can be displayed at greater resolution (1) making the environment more realistic (1) ...more actions can be carried out by Deshan (1) making the gameplay more immersive/exciting (1) Award responses relating to reverse points related to slower processors.	General responses referring to 'smooth' gameplay / reduced lag.	A linked description is required for more than two marks.	**(4)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5di	The owner can decide the fee (1) and whether the software should be distributed (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark

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5dii	A description such as: Memory is assigned/allocated to programs (1) that need it most / that can share it (1) OR The operating system transfers programs in and out of memory (1) keeping track of memory usage (1) OR Protects memory (1) to prevent overwriting (1) OR Uses the hard drive as virtual memory (1) if not enough main memory (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5e	Any **two** from: • Unauthorised access (by hackers) • Accidental deletion • Phishing • Pharming Accept 'theft' if mark point three or four not already awarded.			**(2)**

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Question Number	Indicative content
5f	Candidates should compare different points of view, giving evidence for each one. The response should include a conclusion. The indicative content is not exhaustive/prescriptive and students should be credited for other relevant content. • Legislation means that we will have to ask permission to use media made by others or use royalty-free media • Copyright legislation protects the rights and revenue of artists, therefore allowing them to continue to produce creative works without having to rely on other sources of funding. Therefore, copyright legislation support the creative arts that would otherwise be undermined. • People are aware that breaching the legislation could lead to consequences • The global reach of the Internet means that policing the illegal copying of media is difficult and some people exploit that • International copyright agreements are required to ensure people are accountable when transferring data across international borders, especially where nations do not have comparable laws • Free licences and licences such as creative commons ensure users are aware of their rights and provide a platform for lesser-known artists

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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.