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Pearson Edexcel

Mark Scheme (Results)

November 2020

Pearson Edexcel International GCSE In Information and Commiuncation Technology (4IT1/01)

Paper 01: Written Paper

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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	Do Not Accept	Additional Guidance	Mark
1a	Any **two** from: • Wider choice of sellers • Wider choice of products • Do not have to travel • Can build a profile • Can check availability • Can shop 24/7/365 • Targetted marketing / relevant recommendations • No need to queue • Can compare prices more easily	Generalisations such as: • Better • Cheaper • Quicker Better deals		**(2)**

Question Number	Answer	Mark
1b	C – Hard disc	**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1c	Any **one** from: • 3G • 4G • HSPA		Review additional responses at 2020 Pre-Stand Do not make a Clerical item.	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1di	One mark for a benefit: • Programs will load more quickly • More applications can be open at the same time. Linked explanation such as: • because they are not 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
1dii	A description to include **four** from: • RAM is volatile (1) meaning the contents are lost when not powered (1) OR ROM is non-volatile (1) meaning the contents are retained when not powered (1) • RAM can be changed (1) so applications can write data temporarily to it (1) OR ROM cannot be changed (1) so applications cannot write data temporarily to it (1). • ROM is smaller (1) so is only used to store boot instructions, etc. (1) OR RAM is bigger (1) so can be used to store larger applications (1)		Award one mark each for a maximum of two characteristics. Award a mark for how each characteristic affects the use of the type of memory	**(4)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1e	A description to include **four** from: • Disposal of digital devices in a landfill (1) could cause dangerous chemicals/toxins to leak (1) into drinking water (1) • Reclaiming precious metals (1) exposes workers to more dangerous chemicals/materials (1) by contact during handling (1) • Incineration of digital devices (1) causes chemicals/toxins/harmful gases to be released into the air (1), which could then be inhaled (1) • If batteries are not removed / thrown in bin (1) they can catch fire (1) creating a risk of burns (1)	General responses related to cuts from sharp objects.	All points must be connected to human health, not just to environmental damage alone Max 2 marks per bullet point.	**(4)**

Question Number	Answer	Mark
1f	B – Magnetic tape	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
1g	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: $128 \times 1024^3 \times 8$ 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
1h	Any **two** from: • Cost • Social • Lack of infrastructure • Geographical location • Political / censorship Accept: Disability			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2a	Any **two** from: • Take breaks / reduce usage time • Use an ergonomic input device • Use ergonomic furniture • Use a wrist pad • Adjust posture • Adjust angles of devices • Adjust distances of devices • Do stretches to exercise finger muscles/joints • Reduce brightness			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2b	A drawing that shows **two** from: • Microphone • Joystick • Game controller • Foot pedal • Steering wheel • Motion sensor Accept: VR headset, webcam And **one** mark for: • Appropriate connectivity identified for at least one device		Accept connectivity for non-rewardable device only if appropriate. Accept drawings if not labelled only if recognisable.	**(3)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2c	A description to include a use and method such as: Sachini could transfer data (1) to back up her phone's photos/music/videos/contacts (1) OR She could tether/hotspot/ share her smartphone's 3G connection (1) giving her laptop access to the Internet (1) OR She could transfer data between devices (1) using Bluetooth/USB (1)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2d	A description such as: To access/request/render/display (1) HTML / web pages (1) Accept: website / web content for web page	'browse' for MP1	Reference to HTML/web page for MP2 must be related to valid mark from MP1	**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2e	A description to include: • Download (the update file) (1) • Install (the file) (1)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2f	Any **two** from: • To get new features (perfective) • Improve compatibility e.g. with operating system/hardware changes (adaptive) • To fix/patch bugs (corrective) • To protect against new security vulnerabilities (preventative)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
2g	An explanation such as: Game progress is stored on the hard disk/ SSD/Cloud (1) because it has faster write access than optical media (1) OR Developer does not require the data on the DVD to be updated (1) because this is done on local storage (1) OR The DVD acts as authentication (1) that doesn't require updating (1)			**(2)**

Question Number	Answer	Mark
2h	C – Security feature	**(1)**

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Question Number	Answer	Mark
3ai	A – WAN	**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3aii	A description such as: It increases the time it takes for data to be transferred between devices (1) meaning his voice/video is out of sync / lagging / delayed (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3aiii	Any **three** from: • Reduce distance • Reduce interference • Reduce physical blockages • Reduce number of devices on the network • Reduce number of open applications • Restart network hardware • Use a wired connection		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	To provide **access/connection** to the Internet	Provides access/connection to a network		**(1)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3c	Any **one** from • To connect a LAN to a WAN • To connect two different types of network			**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3d	Any **two** descriptions from • control of user access rights (1) to increase security (1) • centralised administration (1) to roll out updates (1) • centralised backup (1) so each client does not have to be backed up separately (1) • shared software (1) meaning fewer installs / remote access (1) • shared storage and file access (1) reducing need for storage on each device / access from anywhere / collaboration (1) • roaming profiles (1) meaning users can 'hotdesk' (1) • Access to high performance servers (1) to make use of virtualisation (1)	'Easier to share data' for MP4 or 5.		**(4)**

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Question Number	Answer	Mark
3e	D – IP	**(1)**

Question Number	Answer	Mark
3f	B – It is unique	**(1)**

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

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
3h	**Two** explanations from: Inkjet printers print pages more slowly (1) because the print head moves backwards and forwards (1) OR Inkjet printers often produce higher resolution images (1) because droplets can be combined to form a wider range of colours (than can be achieve by fusing toner) (1) OR Text can be less sharp / lower quality (1) because ink can spread/smudge when wet (1) Accept for one mark each: • inkjet printers spray ink • laser printers fuse toner using an electrostatic charge		Candidates may phrase this by addressing laser printers in the first part of their answer.	**(4)**

Question Number	Answer	Mark
4a	B – Wiki	**(1)**
Question Number	Answer	Mark
4b	C – Paraphrasing	**(1)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4c	A description such as: Social bookmarking lets users store URLs (1), tag them with keywords (1) share with members of the community (1) who can search for relevant tags / share the workload (1)		Allow: 'websites'/ 'webpages' for 'URLs'	**(4)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4d	A description to include **two** from: Responses are scanned (1) and analysed by software (1) to determine whether responses are in the correct place / right or wrong (1)			**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4e	A linked explanation to include **two** from: To provide an encrypted connection (1) because data can be intercepted (1) by unauthorised users (1)			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
4f	An explanation such as: It reduces the file size (1) meaning it uploads more quickly /does not take up as much storage on the recipient's server (1)			**(2)**

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

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. • Awareness of cookies and (in)ability to opt in / out • Search results show content related to previously visited sites creating confirmation bias of opinions • Reduced exposure to alternative views / ability to display alternative views • Tailored content, so content is relevant / irrelevant (based on accuracy of user profiles) • Shared devices mean content may not be appropriate to all users

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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: Users can scan/tap their card / do not have to insert their card / do not have to enter their PIN/code (1) because NFC is a contactless payment method (1)	'Swipe' for scan/tap (as this refers to magnetic strip).		**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5b	A description such as: Part of the file is downloaded (1) to a buffer / small part of storage/memory (1) and played straight away (1) whilst more of the file Is downloaded (1)			**(4)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5c	A description such as: The more bandwidth available the more data can be transferred per second (1) meaning it is less likely the buffer will be depleted ('to buffer') (1) causing the music to stop playing / lag / be interrupted (1) Accept: Reverse (related to less bandwidth being available)	Effect on 'quality' or 'user experience' for MP3		**(3)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5di	It is **available to users** (1) to modify /distribute / viewed (1)	'Free' (in relation to cost) 'Use' / 'Access' for MP2		**(2)**

Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5dii	Any **two** from: • User interface • User management • Memory management • File management • Input/output management / Controls hardware • Resource management • Managing utilities • Security • Print spooling • Handles interrupts			**(2)**

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Question Number	Answer	Do Not Accept	Additional Guidance	Mark
5e	Any **two** from: • Virus • Ransomware • Spyware • Phishing • Pharming • Accidental deletion Accept 'malware' if mark point 1, 2 or 3 not already awarded. Accept 'theft' if mark point 3, 4, or 5 not already awarded.	Unauthorised access (rephrase of 'hackers', which is in the question and the question asks for **other** threats).		**(2)**

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Question Number	Indicative content
5f	Candidates should draw on evidence including strengths, weaknesses, alternative actions, relevant data or information. They should come to a supported judgement of the qualities of tools available in relation to staying safe online. The indicative content is not exhaustive / prescriptive and students should be credited for other relevant content. • Report buttons • Moderators • Support groups • Communities • Acceptable use policies (AUPs) • Filters • Firewalls • Anti-malware • Privacy settings • Encryption • Passwords

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Level	Mark	Descriptor (AO3 – Evaluate)
	0	**No rewardable material.**
1	**1–3**	An attempt at evaluation will have been made. A range of evidence will be identified, though not all of it will be useful. Some of the evidence will have been discussed. The discussion will have few (if any) links to the subject and/or context. There may be a conclusion, but this is likely to be a simple statement and not a supported judgement. The response will lack clarity and organisation.
2	**4–5**	The evaluation will have identified evidence that can be used to make a judgement. There will be a range of useful evidence including some of strengths, weaknesses and/or relevant data. The discussion of evidence will have some links to the subject and/or context. There will be a conclusion that makes a judgement on the subject's qualities. The response will show some focus but may not be well organised.
3	**6–8**	The evaluation will have reviewed evidence and provided a conclusion. An appropriate range of evidence will be identified and used. The evidence will be used to come to a judgement that uses most of the evidence. A conclusion will be given that clearly links to the comparisons made in the discussion. The response will show good focus and organisation.