Mark Scheme (Results)

Summer 2024

Pearson Edexcel International GCSE
In Information and Communication Technology
(4IT1) Paper 01R – Time zone 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.
- 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.*

Question Number	Answer	Mark
1a	Any **one** from: ● Speaker ● Headphones / headsets ● Earphones	**(1)**

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

Question Number	Answer	Mark
1c	Delay / Buffering Do not accept: Latency / Lag	**(1)**

Question Number	Answer	Mark
1d	The **maximum** amount of data a connection **can** carry.	**(1)**

Question Number	Answer	Mark
1e	An explanation such as: More people can receive the stream/hear the show (1) because most people will not be connected to the LAN / because a WAN is required for Internet access / a WAN covers a larger (geographical) area (1)	**(2)**

Question Number	Answer	Mark
1f	An explanation such as: Copyright (1) because it offers **legal** protection (1) Copy protection / DRM (1) because it prevents playback (of a protected file) (1)	**(2)**

Question Number	Answer	Do Not Accept	Mark

1gi	16×1024 or 16384 **in the numerator** (1)
	
	400 **in the denominator** (1)
	
	Award both marks for complete expression:
	
	    e.g. 16×1024÷400
	        16÷400×1024
	        1024÷400×16
	
	Award one mark for the correct number of shows: 40
	Accept for one mark: 40.96
	
	Award / for ÷
	Award * for ×
	Award 2^{10} for 1024
		1000 for 1024
		
		400÷16×1024
			(2)

Question Number	Answer	Mark
1gii	Faster load times/programs run more quickly Award: examples of programs running more quickly (e.g. 'Faster processing of the recording')	**(1)**

Question Number	Answer	Mark
1giii	Any **two** from: ● More storage available / more recordings can be stored / cheaper **per MB** ● Faster (to store recordings) ● More durable/robust	**(2)**

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

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

Question Number	Answer	Mark
1gvi	Processor / CPU / GPU	**(1)**

Question Number	Answer	Mark
1gvii	Any one from: ● Add an additional/external sound card / microphone	**(1)**

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

Question Number	Answer	Mark

| 1hii | Two descriptions such as:
   ● Use a firewall (1) to block access to network ports (1)
   ● Use encryption (1) to prevent data from being read/understood if intercepted (1)
   ● Use anti-malware (1) to check for / quarantine viruses (etc) (1)
   ● Check websites are secure (1) by looking for a padlock/ https (etc) (1)
   ● Lock doors / leave in a safe (1) to add a physical barrier (1)

Do not accept: 'use password/PIN/login/biometric' | **(4)** |

Question Number	Answer	Mark

1hiii	Any two from:
	
	Data must be…
	   ● Used for limited/specific purposes
	   ● Only the minimal necessary
	   ● Accurate
	   ● Up to date
	   ● Processed/stored for no longer than necessary
	   ● Processed/stored securely
	   ● Provided with consent
	   ● Do not transfer to other jurisdictions/countries **that do not have similar legal protections**
	   ● Processed in a transparent manner
	
	Do not accept: 'cannot share information/data' without qualification
		(2)

Question Number	Answer	Mark
1hiv	A description such as: ● Content can be personalised (1) to match a user's past activity/interests (1)	**(2)**

Question Number	Answer	Mark

2a	Any one from:
	    ● Like
	    ● Share
	    ● Suggested posts/users
	    ● Comment
	    ● Tagging
		(1)

Question Number	Answer	Mark

2bi	A description to include two from:
	    ● Anxiety (FOMO) / unrealistic expectations / low self-esteem (1) when users compare themselves to others (1) who often provide the best case scenario of their lives (1)
	    ● Loneliness / isolation (1) as people neglect face-to-face relationships (1)
	    ● Lack of face to face interaction (1) could cause social anxiety (1)
	
	Also consider: Sleep disruption, Information Overload, Time Management, Confirmation Bias and Polarisation
		(2)

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

Question Number	Answer	Mark
2biii	Acceptable/responsible use (policy) / AUP	**(1)**

Question Number	Answer	Mark
2c	Two explanations such as: ● Clear context (1) because users can easily follow the flow of conversation / replies are directly linked to the post they're responding to (1) ● Focused conversations (1) because threads enable sub-discussions to happen within a larger conversation (1) ● Easy navigation (1) because users can skip to specific posts or branches / do not have to scroll through comments (1) ● Reduced repetition / diverse viewpoints (1) because users can see previous responses within the same thread (1)	**(4)**

Question Number	Answer	Mark
2di	Any two from: ● Bias ● Age / Out of date ● Fake / Inaccurate ● Irrelevant Do not accept 'accuracy' for MP3	**(2)**

Question Number	Answer	Mark
2dii	Comparison	**(1)**

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

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

Question Number	Answer	Mark
2f	An explanation such as: ● Some people cannot afford to buy devices/access (1) because of the high expense (1) ● Some people are not allowed to access (1) because of social/cultural reasons (1) ● Some people do not know how to connect / use ICT (1) because of a lack of education/experience (1) ● Some people with disabilities cannot access information (1) because of insufficient consideration of web accessibility by designers (1)	**(2)**

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

Question Number	Answer	Mark
3aii	Any two from: ● Gateway ● Ethernet / CAT cable ● Network interface card (NIC) ● Modem Accept: Switch / Hub Do not accept 'cable' if in the context of 'power' or on its own.	**(2)**

Question Number	Answer	Mark
3aiii	A description to include two from: To **read/check** an IP address (1) check/update a routing table (1) send the data to the next router (1) using the fastest/best path/route (1) Do not accept: 'shortest' for fastest/best	**(2)**

Question Number	Answer	Mark
3aiv	Any one from: ● Blocking/allowing a device/user ● Identifying/tracking a device/NIC/user ● Assigning a static/fixed IP	**(1)**

Question Number	Answer	Mark
3av	An explanation to include two from: Less reliable / More susceptible to malicious activity / Data might not be received / Data conflicts (1) because names are not unique / more than one device can have the same name (1) because they are not allocated by a server (1)	**(2)**

Question Number	Answer	Mark
3bi	Any two from: ● Wi-Fi ● Bluetooth ● NFC ● Infra-red	**(2)**

Question Number	Answer	Mark
3bii	An explanation such as: It would be less susceptible to buffering (1) because the data does not have to travel as far / through as many devices (1) Do not accept: 'latency' / 'lagging' for 'buffering'	**(2)**

Question Number	Answer	Mark
3c	● Broadcast / radio waves ● Cable / Fibre optic	**(2)**

Question Number	Answer	Mark
3d	A description such as: To request/access data (1) from a server (1) Award responses that describe examples of the role of a client e.g. sending print jobs Do not award: Responses that describe the role of a server.	**(2)**

Question Number	Answer	Mark
3e	Two explanations such as: • There is a single point of failure (1) because clients depend on the server for access to resources / because important data and services are centralised (1) • There could be downtime / loss of access to resources (1) because servers can experience hardware failure / software errors / network problems (1) • There might be performance bottlenecks / expensive upgrades (1) because the server may become overwhelmed (1) • Maintaining a server in a client-server network can be more complex / costly (1) because servers require regular updates, security measures, backups, and monitoring to ensure continuous availability and security of resources. (1)	**(4)**

Question Number	Answer	Mark
3f	An explanation such as: Increases security (1) because traffic/data is encrypted (1) Accept 'protects data' for 'secures data'	**(2)**

Question Number	Answer	Mark
3g	An explanation such as: ● Wired connectivity (1) because there is less chance of interference / greater stability / greater transfer speed/bandwidth (1) ● Wireless (1) because there is less chance of cable tangles / trip hazards (1)	**(2)**

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

Question Number	Answer	**Mark**
4b	Operating system Accept: System software	**(1)**

Question Number	Answer	**Mark**
4c	An explanation such as: ● Limited technical support / documentation (1) because there is more reliance on the (developer) community (1) Accept: Tessy may not be as productive (1) because the software may lack advance features (1) Accept: May be more susceptible to malware (1) because vulnerabilities can be discovered (1)	**(2)**

Question Number	Answer	Mark
4d	Any one from: ● Programme / alter the source code ● Update the software	**(1)**

Question Number	Answer	Mark
4e	A	**(1)**

Question Number	Answer	Mark
4f	An explanation such as: Easier to record when away from the studio / at live events (1) because they are more portable/smaller/lighter (1)	**(2)**

Question Number	Indicative content
4g	Comparison of: ● Portability ● Compatibility ● Ease of connection ● Stability / interference ● Range ● Bandwidth / Latency ● Failsafe for communication (cellular network) Linked to scenario: ● Transferring data when playing large music files ● Streaming audio/video / uploading photos ● Making phone calls ● Capacity of networks at large capacity venues

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.

Question Number	Answer	Mark
5a	Any two from: • Reduced access to learning opportunities • Poor job opportunities • Reduced access to goods (e.g. shopping) • Reduced access to services (news, weather, government) • Reduced access to entertainment • Narrower social/cultural views **NB:** 'Reduced access to goods and services' gains 1 mark max without examples. **Do not accept:** 'information' for 'services'.	**(2)**

Question Number	Answer	Mark
5b	Two explanations such as: • Stronger sense of community / social bonds (1) because there is more face-to-face communication/interaction / people rely on each other for information sharing/support/entertainment (1) • Traditional knowledge and culture is preserved (1) because oral storytelling, rituals, and cultural practices remain essential ways of passing down knowledge from one generation to the next (1) • Enhanced privacy/trust (1) because there is no digital surveillance (1) • Fewer health problems (1) because less time is spent indoors/with poor posture (1) • More resourcefulness/innovation/sustainability (1) because community members rely on their creativity to address challenges and find solutions (1)	**(4)**

Question Number	Answer	Mark
5c	Two descriptions such as: ● Create energy efficient data centres (1) by using natural cooling systems (1) ● Use renewable energy (1) such as hydro/solar etc (1) ● Using/donating recycled/refurbished devices (1) to reduce e-waste (1) ● Compress content (1) decreasing the energy consumption associated with data transfer (1) ● Use adaptive streaming (1) to ensure users receive the best quality possible without unnecessary data consumption (1) ● Use Content Delivery Networks (CDNs), which store content on servers located closer to the users (1) reducing the distance data needs to travel and the energy needed for transmission (1)	**(4)**

Question Number	Indicative content
5d	- Promotion of work easier / More discoverable, but same for all - Easier to collaborate - Global audience - More distribution methods / lower cost - Copyright / Digital rights management

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.