



Mark Scheme (Results)

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Pearson Edexcel International GCSE
In Information and Communication Technology
(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.
- 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
1(a)	Award one mark for the correct response: D – Processor	1

Question Number	Answer	Mark
1(b)	Award one mark for the correct response: C – NFC	1

Question Number	Answer	Mark
1(c)	<p>Award one mark for a correct type of network a computer can connect to up to a maximum of two marks, from:</p> <ul style="list-style-type: none"> • personal area network/PAN (1) • wide area network/WAN (1) • virtual private network/VPN (1) • storage area network/SAN (1) • metropolitan area network/MAN (1) • enterprise private network/EPN (1) • campus area network/CAN (1) <p>Accept any other appropriate responses.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • local area network/LAN • wireless local area network/WLAN • peer-to-peer network • client-server network 	2

Question Number	Answer	Mark
1(d)	<p>Award one mark for a correct type of internal storage media that a computer can use up to a maximum of two marks, from:</p> <ul style="list-style-type: none"> • magnetic/hard disk (1) • optical/CD/DVD/Blu-ray (1) • flash/solid state/USB (1) • (magnetic) tape (1) <p>Do not accept:</p> <ul style="list-style-type: none"> • hard drive 	2

Question Number	Answer	Mark
1(e)	<p>Award one mark for the correct response:</p> <p>B – Desktop replacement</p>	1

Question Number	Answer	Mark
1(f)	<p>Award up to two marks for a correct description of how 4G allows people to work from anywhere, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Through a radio system of masts broadcasting 4G signals across the country (1) it relays data from the Internet to a 4G enabled device/mobile device/laptop (and vice versa) (1) • It uses the mobile broadband network to provide home internet access (1) using a 4G router with a SIM card (1) • It allows mobile devices/laptops to access the internet without needing Wi-Fi (1), which allows people to use their devices on-the-go (1) <p>Accept any other appropriate response.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Benefits of 4G connectivity, such as fast upload/download speeds/low latency • How an Internet connection allows people to work from anywhere, such as they can access cloud storage/hosted applications/collaborate with work colleagues. 	2

Question Number	Answer	Mark
1(g)	<p>Award one mark for:</p> <ul style="list-style-type: none"> sight of 8 or sight of 1024 <p>Award two marks for:</p> <ul style="list-style-type: none"> sight of 8 and sight of 1024 <p>Award three marks for:</p> <ul style="list-style-type: none"> complete expression: $2 \times 1024^4 \times 8$ result of the calculation: 17,592,186,044,416 <p>Accept:</p> <ul style="list-style-type: none"> For 1024^4 accept: <ul style="list-style-type: none"> $1024 \times 1024 \times 1024 \times 1024$ 2^{40} 1,099,511,627,776 For sight of 8 and 1024 accept: <ul style="list-style-type: none"> 8,192 (1024×8) 8,388,608 ($1024^2 \times 8$) 8,589,934,592 ($1024^3 \times 8$) 16,384 ($2 \times 1024 \times 8$) 16,777,216 ($2 \times 1024^2 \times 8$) 17,179,869,184 ($2 \times 1024^3 \times 8$) <p>Do not accept:</p> <ul style="list-style-type: none"> 1000 for 1024 	3

Question Number	Answer	Mark
1(h)(i)	<p>Award one mark for the correct response:</p> <ul style="list-style-type: none"> Client (1) 	1

Question Number	Answer	Mark
1(h)(ii)	<p>Award one mark for a correct benefit of connecting computers to a server (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Saves space/cost (1) because it allows users to share files/hardware/resources/peripherals/printers/scanners (1) • Improves collaboration (1) because users can share files/information and interact in real time (1) • Provides centralised backup/control (1) because security does not need to be carried out on individual devices (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
1(h)(iii)	<p>Award up to four marks for two correct descriptions of factors affecting the speed that data is transferred on a network, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • (High) latency (1) (will increase) the time taken for data packets to travel between devices (1) • (High/low) bandwidth (1) means data can be transferred at the maximum rate / will limit/reduce the amount of data that can be sent at the same time (1) • Interference (1) will disrupt/weaken/destabilise the signal (1) • Network load/number of users/devices (1) will lead to network congestion/collisions/packet loss (1) • Method of transfer: <ul style="list-style-type: none"> ○ fibre optic cables (1) can transmit data at faster speeds because they use light to transmit data (1) ○ copper cables are weakened (1) by long distances/bad weather/electromagnetic interference (1) ○ wireless signals are weakened (1) by blockages/obstacles/distance (1) ○ wired connections are faster (1) than wireless (1) <p>Accept any other appropriate responses.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Reference to large file sizes taking longer to upload/download because more data needs to be transmitted. 	4

Question Number	Answer	Mark
1(h)(iv)	<p>Award one mark for a correct benefit to the environment of reusing devices (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Reduces e-waste (1) because reusing devices prevents them from adding to landfill/incinerated (1) • Conserves natural resources/minerals/metals (1) because there's less demand for new production (1) • It's more sustainable (1) because it reduces the energy/greenhouse gas emissions/pollution (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2(a)	<p>Award one mark for each correct line up to a maximum of three marks.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Utility software</p> <div style="display: flex; flex-direction: column; gap: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Formatting</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Encryption</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Defragmentation</div> </div> </div> <div style="text-align: center;"> <p>Purpose</p> <div style="display: flex; flex-direction: column; gap: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Reorder data</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Create copies of files</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Reduce file sizes</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Protect data</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">Set the file system</div> </div> </div> </div> <p>Do not award a mark if more than one line is drawn to and from a box.</p>	3

Question Number	Answer	Mark
2(b)	<p>Award one mark for the correct response: A – Application</p>	1

Question	Answer	Mark
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Number		
2(c)	<p>Award one mark for a correct way an operating system uses resource management when software is loaded (1), and one mark for a justification for that way (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • It allocates/provides the resources/memory/processing time (1) to ensure the software doesn't crash/hang (1) • To optimise performance/ensure the system doesn't slow down/help the software to load faster (1) by making effective/efficient use of resources/preventing conflicts (1) • To allow multitasking/multiple programmes to run simultaneously (1) because it ensures each programme has a fair share of the available resources (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2(d)	<p>Award one mark for a correct advantage of using open source software over proprietary software (1), and one mark for a justification for that advantage (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • It is more flexible / it can be personalised (1) because it can be adapted/modified/customised to meet the user's needs (1) • It is cheaper / often free (1) because there are no proprietary licensing costs (1) • It is more collaborative (1) because the community of developers work together to add new features/improvements (1) • Issues can be fixed quickly (1) because anyone can edit it (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2(e)	<p>Award one mark for a correct way of staying safe when using social networks up to a maximum of two marks, from:</p> <ul style="list-style-type: none"> • don't share too much personal information (1) • set profiles to private (1) • report fake accounts (1) • block malicious/unknown users / inappropriate content (1) • turn off geolocation/geotagging (1) <p>Accept any other appropriate responses.</p> <p>Do not accept generic responses related to staying safe online, such as:</p> <ul style="list-style-type: none"> • use strong passwords • use two-factor authentication <p>Do not accept any part of 'zip it, block it, flag it' without expansion.</p>	2

Question Number	Answer	Mark
2(f)	<p>Award one mark for the correct response:</p> <p>B – Bluetooth and GPS have latency</p>	1

Question Number	Answer	Mark
2(g)(i)	<p>Award one mark for a correct example of data held in a tracking cookie up to a maximum of two marks, from:</p> <ul style="list-style-type: none"> • browsing history / search history / websites visited / web pages viewed / links clicked (1) • time spent on web pages (1) • (past) purchases (1) • user preferences / language preferences / settings / login data (1) • location (1) • (type of) device / operating system / browser type / screen resolution (1) • IP address (1) • username / email address / passwords (1) • advertisement interactions (1) <p>Do not accept:</p>	2

	<ul style="list-style-type: none"> • MAC address 	
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Question Number	Answer	Mark
2(g)(ii)	<p>Award one mark for understanding of cookies, such as: (Tracking) cookies/transactional data store information about the user's interests/preferences (1)</p> <p>Award one mark for a linked justification, such as:</p> <ul style="list-style-type: none"> • so the information shown (first) relates to previous activity/browsing history (1) • so the information shown is customised to the user (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2(g)(iii)	<p>Award one mark for the correct response:</p> <p>D – Use the data for limited purposes</p>	1

Question Number	Answer	Mark
3(a)	<p>Award one mark for a correct drawback of providing read/write access to all documents, from:</p> <ul style="list-style-type: none"> • security (1) • data theft (1) • accidental/malicious/unauthorised changes (1) • accidental/malicious/unauthorised deletion (1) <p>Do not accept:</p> <ul style="list-style-type: none"> • can be edited by anyone 	1

Question Number	Answer	Mark
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3(b)	<p>Award up to two marks for a correct description of how a firewall prevents malware from being sent to devices in a network, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Firewalls examine/compare data packets/IP addresses against filters/an allow/block list (1) and block suspicious/unauthorised traffic (1) • Firewalls use predefined security rules (1), which block known malicious IP addresses/ports / inspect network packets for suspicious content (1) • Firewalls filter (incoming and outgoing) data in network traffic (1) by inspecting IP addresses/the data source/destination ports/transfer protocols (1) <p>Accept any other appropriate response.</p>	2
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Question Number	Answer	Mark
3(c)	<p>Award one mark for the correct response:</p> <p>C – Radio waves</p>	1

Question Number	Answer	Mark
3(d)	<p>Award one mark for the correct response:</p> <p>A – Devices can be more portable</p>	1

Question Number	Answer	Mark
3(e)(i)	<p>Award one mark for the correct response:</p> <p>D – Wiki</p>	1

Question Number	Answer	Mark
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<p>3(e)(ii)</p>	<p>Award one mark for a correct drawback of gathering information from a user-generated reference site (1), and one mark for a justification for that drawback (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • It's less reliable / inaccurate / biased (1) because the source is unknown / not all contributors are experts / the information requires fact checking/corroborating / it can be modified anyone (1) • There's a risk of legal issues (1) because the information may breach copyright/violate privacy laws (1) <p>Accept any other appropriate response.</p>	<p>2</p>
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Question Number	Answer	Mark
<p>3(e)(iii)</p>	<p>Award up to four marks for two correct descriptions of the features of a VLE that can be used to help students learn, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Forums/message boards/live chat/walls/threaded discussions (1) to communicate/discuss/collaborate with teachers/other students (1) • Live-streamed classes (1) where students can interact with teachers/get instant feedback (1) • Pre-recorded content/courses/resources (1) so students can learn at their own pace/control their own learning/revisit topics (1) • (online) assignments/assessments/quizzes/tests (1) to test understanding/receive feedback (1) • Resources/content can be accessed from anywhere/from any device with an internet connection (1) so students can learn from home/when and where they choose (1) • Resources/materials include videos/audio/links/presentations (1) to engage students/personalise learning/support different learning styles (1) <p>Accept any other appropriate response.</p>	<p>4</p>

Question Number	Answer	Mark
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<p>3(e)(iv)</p>	<p>Award one mark for a correct reason why Peta paraphrases the information found during research for an essay (1), and one mark for a justification for that reason (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • To demonstrate her understanding (1) because Peta will use the information in a different context (1) • To improve readability (1) because the information will flow better/be more concise/fit her writing style (1) • To avoid plagiarism (1) because Peta can use ideas/information from others (and cite/reference the source) (1) • To select the most important information/facts/statistics (1) because Peta can remove unimportant information (1) <p>Accept any other appropriate response.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • References to copyright. 	<p>2</p>
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Question Number	Answer	Mark
<p>3(e)(v)</p>	<p>Award one mark for a correct impact of unequal access to information (1), and one mark for a justification for that impact (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Reduced job/employment prospects/opportunities (1) because less opportunity to improve knowledge/level of education/skills/abilities (1) • Greater isolation (1) because it's harder to connect with others (1) • Social inequality (1) because it improves/is a barrier to knowledge of healthcare/accentuates gender discrimination (1) <p>Accept any other appropriate response.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • Responses relating to 'misinformation' because the focus of the question is on access to information not the fitness for purpose of the available information. 	<p>2</p>

Question Number	Answer	Mark
3(f)(i)	<p>Award one mark for a correct output device required to make a video call, from:</p> <ul style="list-style-type: none"> speakers/headphones/earphones/headset (1) screen/monitor/display/visual display unit/VDU (1) <p>Do not accept:</p> <ul style="list-style-type: none"> camera/webcam microphone 	1

Question Number	Answer	Mark
3(f)(ii)	<p>Award one mark for a correct benefit to Peta of increasing bandwidth (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> She can be more productive (1) because of faster data transfer/shorter download times (1) Improved user experience (1) because of reduced buffering (1) Better quality sound/image/resolution (1) because more data can be transferred (per second) (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
3(g)	<p>Award one mark for a correct reason why using cable wrapped in a thin sheet of metal increases transmission speed (1), and one mark for a justification for that reason (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> There's less interference (1) because it's shielded/the signal is improved (1) It protects the inner conductors from electromagnetic interference/EMI/electronic interference (1) because it absorbs EMI waves and conducts them to ground/reflects EMI waves away from the cable (1) <p>Accept any other appropriate response.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> Improved conductivity. 	2

Question Number	Answer	Mark
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4(a)	<p>Award two marks for a correct benefit to a company of sharing digital products online, from:</p> <ul style="list-style-type: none"> • increased audience / customers (1) • increased income / sales (1) • to showcase/promote products/quality (1) • to generate awareness of the products/brand (1) • to get feedback / comments / likes/shares (1) 	2
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Question Number	Answer	Mark
4(b)(i)	<p>Award one mark for a correct benefit of using magnetic storage rather than solid state storage (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Less expensive (1) because the cost per storage unit is cheaper than solid state storage (1) • Longer lifespan (1) because it can be written to more times than solid state storage (1) • Can store more data (1) because magnetic storage typically has a higher storage capacity than solid state storage (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
4(b)(ii)	<p>Award one mark for a correct benefit of increased RAM when editing images (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Faster image editing (1) because less chance of need for virtual memory/use of secondary storage (1) • Better performance (1) because you can work on more image files at once/larger image files (1) • Smoother editing experience (1) because more RAM reduces freezes/lagging (1) • Enables multitasking (1) because more RAM will allow the computer to complete more image editing tasks at the same time (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
4(c)	<p>Award two marks for a correct key feature of image editing software that can be used to edit a photograph, from:</p> <ul style="list-style-type: none"> • cropping (1) • straightening (1) • removing unwanted elements/objects/backgrounds (1) • layers/selection/masking (1) • transforming/resizing (1) • image adjustments/image enhancements/ brightness/contrast/exposure/colour/hue & saturation/curves/levels/white balance/shadows (1) • filters/effects/blurring/sharpening/distorting/noise reduction/dodge and burn (1) • add text (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
4(d)	<p>Award one mark for a correct reason why copyright legislation cannot always protect the rights of digital media producers (1), and one mark for a justification for that reason (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Copyright law is regularly ignored (1) because it's complicated/difficult to enforce (1) • Using/adapting someone's digital work without consent is simple/easy to do (1) because it's difficult to detect (1) • Generative AI is not always covered by copyright legislation (1) because their work has not been explicitly copied/its covered by fair use (as it's a benefit to society) (1) • Their work may not be protected in some countries (1) because copyright law operates differently in different countries (1) • It's difficult to enforce (1) because digital products are global (1) <p>Accept any other appropriate response.</p>	2

Question Number	Indicative content	Mark
4(e)	<p>Responses will be credited according to the learner’s demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below.</p> <p><i>Third-party payment systems:</i></p> <p>Advantages:</p> <p>Convenience: peer-to-peer payments, online purchases, and bill payments without bank details shared.</p> <p>Speed: Transactions processed instantly or quickly.</p> <p>Rewards and promotions: Some platforms offer cash back, discounts, or loyalty programs.</p> <p>Security: Utilise encryption and fraud protection measures.</p> <p>Disadvantages:</p> <p>Transaction fees: Charges for sending or receiving money, especially internationally.</p> <p>Limited customer service: May be harder to reach support compared to banks.</p> <p>Potential security risks: Account hacking or data breaches possible.</p> <p>Reliance on internet connectivity: Requires internet access for transactions.</p> <p><i>Bank cards:</i></p> <p>Advantages:</p> <p>Widely accepted: Can be used at most physical and online merchants.</p> <p>Convenience: Faster than cash, no need to carry large amounts.</p> <p>Rewards and benefits: Many cards offer points, travel miles, or cash back.</p> <p>Consumer protection: Chargebacks available for disputed transactions.</p> <p>Disadvantages:</p> <p>Annual fees: Some cards have annual fees associated with ownership.</p> <p>Fraud liability: Depending on the situation, customers may be liable for fraudulent charges.</p> <p>Foreign transaction fees: Charges incurred when using cards overseas.</p> <p><i>Contactless payment using NFC:</i></p> <p>Advantages:</p> <p>Speed and convenience: Quickest payment method, requires simply tapping the device.</p> <p>Security: Uses encryption for transactions.</p> <p>Hygiene: Contactless avoids touching shared surfaces like payment terminals.</p> <p>Multiple options: Available on various smartphones and smartwatches.</p> <p>Disadvantages:</p> <p>Limited acceptance: Not yet universally accepted everywhere.</p>	

	<p>Requires compatible devices: Users need phones/wearables with NFC technology.</p> <p>Potential security concerns: Risks associated with device loss or malware.</p> <p>Data privacy: Sharing location data raises privacy concerns for some users.</p> <p><i>Payment protection systems:</i></p> <p>Advantages:</p> <p>Security: Provide additional layers of protection against unauthorised transactions.</p> <p>Dispute resolution: Assist in resolving issues with merchants/fraudulent charges.</p> <p>Peace of mind: Offer an extra layer of security and potential for reimbursement.</p> <p>Disadvantages:</p> <p>Complexity: Understanding different systems/how they work can be confusing.</p> <p>Potential costs: Some protection plans might involve additional fees.</p> <p>Not fool-proof: Protection may not cover all types of fraud or mistakes.</p> <p>Conclusion:</p> <p>Reference to the most appropriate way to purchase digital images.</p>	
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Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	<p>A limited number of points will be identified, which may only support one point of view.</p> <p>At least one point will have evidence to support it.</p> <p>The discussion will have few (if any) links to the scenario.</p> <p>There may be a conclusion but this is likely to be a simple statement.</p> <p>The response will lack clarity and organisation.</p>
Level 2	4-5	<p>A range of points will be identified, which compare different points of view, though the discussion may be unbalanced.</p> <p>Some points will be supported by evidence.</p> <p>The comparisons will include links to the scenario but may include some generic points.</p> <p>A conclusion will be included, which will link with the comparison, though the link may be implicit.</p> <p>The response will show some focus but may not be well organised.</p>
Level 3	6-8	<p>The discussion compares a range of different points of view.</p> <p>Most points will be supported by evidence.</p> <p>The majority of the discussion will link to the scenario.</p> <p>A conclusion will be given that clearly links to the comparisons made in the discussion.</p> <p>The response will show good focus and organisation.</p>

Question Number	Answer	Mark
5(a)	<p>Award up to two marks for a correct description of one way website content can be optimised to reduce the bandwidth requirements of users, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Compress images/video (1) to reduce the file size (1) • Reduce video resolutions/frame rate/bitrate (1) to lower the number of pixels/frames per second/volume of information sent (1) • Embed videos (1) so the video is hosted on a third-party platform/web pages load quicker (1) • Remove background images (1) because they are loaded in full (1) • Limit the number of adverts (1) to reduce page load times (1) • Offload and cache the delivery of PDF/MP3/MP4 files with a content delivery network (CDN) (1) to reduce the amount of data transferred between the user and the origin server (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
5(b)	<p>Award up to two marks for a correct description of one way that streaming music differs from downloading music, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Streamed data does not have to be downloaded all at once (1) and can be played from the buffer memory (1) • Streaming music involves continuously receiving data over the internet (1) whereas downloaded music can be listened to offline (1) • Streamed music is played in real time/directly from the internet (1) whereas downloading music saves a copy of the music to your device's hard drive (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
5(c)	<p>Award one mark for a correct benefit to companies of using targeted advertising (1), and one mark for a justification for that benefit (1), up to a maximum of two marks.</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • (Possibility of) increased sales/income/customers (1) because the adverts match the interests/online behaviour of the audience (1) • Reduced costs / more effective/efficient way to spend the company's advertising budget (1) because adverts are only shown to users who are likely to be interested (1) • Improved customer engagement/interest (1) because companies can send different messages to different audiences/personalise the content of the adverts (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
5(d)	<p>Award up to two marks for a correct description of how transaction logs improve the security of data, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • It keeps track of changes to data / attempts to access data (1) to enable rollback/data recovery (1) • A record is kept of actions (1) to make sure data changes are authorised/comply with data protection regulations (1) • It records changes/modifications to data (1) and the information needed to recover the data in the event of a failure (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
5(e)(i)	<p>Award two marks for a correct benefit of hosted software, from:</p> <ul style="list-style-type: none"> • (software) updates are automatic (1) • reduces the risk of data loss/data is backed up (1) • greater collaboration (1) • can be accessed from any (Internet-enabled) device (1) <p>Accept any other appropriate response.</p> <p>Do not accept:</p> <ul style="list-style-type: none"> • can be accessed from low-performance devices 	2

Question Number	Answer	Mark
5(e)(ii)	<p>Award one mark for the correct response:</p> <p>A – Application servers do the processing</p>	1

Question Number	Answer	Mark
5(f)	<p>Award up to four marks for two correct descriptions of the functions of a network operating system, such as:</p> <p>Marking points may be reversed/given in any order.</p> <ul style="list-style-type: none"> • Establishes a connection to the network (1) by verifying users/user authentication (1) • Creates/manages/separates user accounts (on the network) (1) to ensure users cannot access each other's files (1) • Provides/controls access to connected devices (1) by allocating shared (hardware/software) resources (1) <p>Accept any other appropriate response.</p>	4

Question Number	Indicative content	Mark
5(g)	<p>Responses will be credited according to the learner’s demonstration of knowledge and understanding of the material, using the indicative content and level descriptors below.</p> <p>Mobile devices have features that have enhanced people’s free time. These include: Portability, performance, storage, user interface, connectivity, media support, applications, multi-functional nature of devices.</p> <p>Responses may discuss how these features have impacted upon people’s ability to improve their:</p> <p>Leisure/Entertainment</p> <ul style="list-style-type: none"> • Media is available on the move • Can record events and share them with friends/family • Find way around to places more easily • Can personalise media consumed, so not having to all view the same content (as with a family TV). • Apps have developed which can solve problems ad-hoc. <p>Socialising and Communications</p> <ul style="list-style-type: none"> • Can keep in touch with friends and family using email / phone / social networks / VoIP etc • Organise their time ‘on the move’ so more flexible arrangements can be made and altered as events change. • Reduced the cost of talking to others. • Developing new types of language and methods of communication. <p>Culturally / Socially</p> <ul style="list-style-type: none"> • More culturally aware – online access to theatre, music, concerts, museums, virtual tours of cities. • More politically aware • Able to form relationships more easily <p>Learning</p> <ul style="list-style-type: none"> • Have access to learning materials (formal or informal) from anywhere, so can continue to learn in free time: the concept of ‘Hidden learning’ 	

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	<p>A limited number of points will be identified, some of which will support the statement.</p> <p>At least one point will have evidence to support it.</p> <p>There will be few (if any) links to the quote / statement.</p> <p>There may a conclusion / summary of the argument but this is likely to be a simple statement.</p> <p>The response will lack clarity and organisation.</p>
Level 2	4-5	<p>A range of points will be identified but they will not all support the quote / statement.</p> <p>Some points will be expanded and these will usually strengthen the support of the statement.</p> <p>The points made will mainly link to the quote / statement but may include some generic points.</p> <p>A conclusion / summary will be included.</p> <p>The response will show some focus but may not be well organised.</p>
Level 3	6-8	<p>The response will provide good evidence to support the quote / statement.</p> <p>The response will be well argued with effective use of evidence.</p> <p>The evidence used will be clearly explained.</p> <p>There will be a conclusion / summary that clarifies the quote / statement.</p> <p>The response will show good focus and organisation.</p>

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