# 6-A-Day – Computer Science GCSE (49)

| Q1 | 2 from <br>• More instructions/programs/applications can run at the same time/be held in RAM <br>• Open software faster/respond faster <br>• More memory space for current programs <br>• Run more memory intensive programs/relevant example e.g. computer games/graphic rendering <br>• reduces use of Virtual Memory <br>• .....less use of hard drive which is slower to <u>access</u> | 2 | |
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| Q2 | e.g. <br>• Increase processor clock speed <br>• Run more FE cycles per second <br>• Faster response <br>• Smoother actions <br>• Less likely to freeze <br><br>• Add more cores <br>• Run more tasks simultaneously <br>• Better performance for programs that are programmed for multi-core systems <br>    o E.g. new computer games <br><br>• Increase cache size <br>• Cache stores frequently used instructions/programs/data <br>• Can store more so increase access speed to more frequently used instructions/programs/data <br><br>• New graphics card <br>• Can carry out more processes for CPU <br>• Can improve speed and quality of graphics <br><br>• Change hard disk drive to SSD <br>• faster read/write speed | 6 | **High Level Response (5-6):** <br>Several upgrades are identified and there is a detailed explanation of how each of these will impact the computer given in the example. <br>There will be few if any errors in spelling, grammar and punctuation. Technical terms will be used appropriately and correctly. <br><br>**Medium Level Response (3-4):** <br>Upgrades are identified, although how these would improve the performance may be weak. There may be occasional errors in spelling, grammar and punctuation. Technical terms will be mainly correct. <br><br>**Low Level Response (1-2):** <br>There is an attempt to identify upgrades that could be made. There may be little or no explanation of how these improve performance. The points are poorly expressed or are not related to the context. There is limited, if any, use of technical terms. Errors in grammar, punctuation and spelling may be intrusive. <br><br>Allow defragmentation and reducing the read time for the hard disk. <br><br>Do not allow hard drive if referring to secondary storage size, allow for increasing amount of VM. <br><br>Do not allow: <br>• Increasing RAM <br>• Upgrading components that do not affect performance (e.g. peripherals) |
| Q3 | • WAN is over a large geographical area/needs to transmit over a large distance // a LAN is over a small geographical area. <br>• WAN uses <u>external</u> hardware/infrastructure/cables/network // LAN has its <u>own</u> infrastructure/cables/network/hardware due to distance/practicalities | 2 | NB Examples of infrastructure/hardware are allowed for WAN e.g. satellite, phone lines, Internet <br>Allow LAN as <u>Ethernet</u> for second bullet <br><br>NOT wide area for WAN |

| Q4 | 2 marks per benefit<br><br>E.g.<br><br>- All files can be stored centrally<br>- …so workers can access files from any computer<br>- …all computers can update the central database/file<br>- …Peer-to-peer files might be stored on their own computers/spread across many computers<br><br>- Backups are central<br>- …all data is backed up each time<br>- …individual computers do not need to backup their own data<br>- …Peer-to-peer may need to perform their own backups.<br><br>- Monitor clients<br>- …to ensure they are working correctly<br><br>- Upgrade software centrally<br>- …so you do not have to install on each computer individually<br><br>- Central security (antivirus/firewall)<br>- …do not need to install protection on all computers<br>- …Peer-to-peer individual security may need to be installed on individual computers | 4 | Do not allow:<br>-easy to share data<br>-"more secure" |
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| Q5 | - WWW is the web pages (that are stored on servers)<br>- Internet is the infrastructure // collection of networks | 2 | |
| Q6 | 10111111 | 1 | |