

BCS Higher Education Qualification

Certificate in IT

April 2023

EXAMINERS' REPORT

Computer and Network Technology (Technol)

Questions Report:

A1	<p>This question was attempted by the fewest number of students. The candidates did not display a good understanding of the questions and scored quite low. Students did not display an understanding of how LCD displays work and what is meant by "Aspect Ratio". Candidates often did not display the technical depth required for the first part of the question</p> <p>Many candidates found this question challenging. For part a), explanations of backlight and coloured dyes tended to be vague and few answers included any explanation of liquid crystals in the display of coloured pixels. Part b) was answered well with a good appreciation of resolution and aspect ratio. Explaining colour dye however did pose a problem with candidates not answering this part of the question.</p>
A2	<p>This question proved popular.</p> <p>For part a), almost all candidates were able to describe the basic logic gates. However, around half of candidates failed to include the correct notation to describe the gate function. Part b) presented difficulty for many candidates. The question required the implementation of the basic gates with NAND alone. Many answers showed the use of a number of different cascaded gate configurations, with and without the use of NAND gates and subsequently gained no marks for this part, as they did not answer the question. Many candidates did not answer part b).</p>
A3	<p>This question on networks proved the most challenging in part a) of the paper. Very few candidates attempted this question. Answers tended to be narrative and did not show the segmentation of the ip address in subnet groupings. A minority of candidates correctly identified the CIDR notation for 0. /24. For part b). Candidates showed an appreciation of the effects of typing ping and an ip address in a private network.</p> <p>A lack of technical understanding demonstrated in Part b) was consistent, although most demonstrated a knowledge of the purpose of the named technology, they did not demonstrate a functional breakdown of steps to achieve the purpose.</p>

A4	
	<p>The question asked in part a) for an explanation of virtual memory and in part b) for an explanation of swap space.</p> <p>For part a) many candidates chose to merge the answers to both questions. Virtual memory was explained in the way swap space is used and not in terms of virtual memory in the context of the operating system.</p> <p>Part b) answers tended to repeat the answer given in part a). A significant number of candidates expressed the idea of virtual memory as non-existent memory or conceptual memory, which is incorrect. A number of candidates were aware of the basic concepts of virtual memory however memory management processes within operating systems as a whole was not widely understood.</p>
B5	
	<p>Answered by the large majority of candidates, with almost all of them gaining high marks for stating the advantages and disadvantages of the different types of computer systems. Sometimes the differentiation could have been clearer between advantage and disadvantage. Candidates would benefit from remembering to formulate their answers.</p>
B6	
	<p>This question proved difficult for many. Part a) required a description of the purpose of communication protocols. Very few answers indicated the need for standardisation of data formats and communication protocols. For part b) many answers gave a good account of DHCP. However, answers failed to give any correct instances of its use.</p>
B7	
	<p>Several students gained full marks on this question and scored well identifying OS functions. There was a tendency for some students to talk about architecture functions like ALU etc.</p> <p>Many answers showed a good appreciation of the basic functions of an operating system. In many cases, candidates were unable to go beyond naming and giving a very brief description of the function. For those candidates able to give detailed descriptions maximum marks were awarded. In a high number of cases, candidates went far beyond four functions and gave extended lengthy (and correct) answers for which extra marks were not available.</p>
B8	
	<p>Fewer students answered this question, stating the general point of multiple processors on a single physical chip but detail after that point tended to wane. Diagrams were on the whole basic although some managed to talk about buses and different layers of caching etc. There were some cases of confusion with this and a functionally different technology that was interchanged incorrectly.</p>

B9	
	<p>Networking knowledge amongst the students seemed to be lacking, many did not mention the purpose of a LAN nor a VLAN. Many learners spoke about WAN's and some even went further and discussed PAN's, MAN's etc. Common misconceptions included VLAN's were always wireless. Part b) was seemingly understood and few gained marks here.</p> <p>In part a) candidates were able to give a reasonable description of the LAN, but were unable to provide a full and correct description of a VLAN. Part b) depended on the knowledge of differences between the LAN and VLAN. The lack of a more in depth understanding of the VLAN made comparisons difficult to achieve. Understanding of VLANs needed to be improved.</p>
B10	
	<p>This question concerning factors used in choosing types of printers was generally well answered. Many candidates chose to interpret the question as laser v inkjet, rather than using the factors to assess suitability for either type. Candidates who listed four correct factors however discussion surrounding these did not go into sufficient depth for top marks in most cases.</p>
B11	
	<p>Students lack of knowledge in networking was displayed with only a few students understanding the network layer and data link layer functionality of both devices and how they were used.</p> <p>For part a) most candidates were able to describe the basic function of a router, however few were able to show any pertinent examples. Answers gave correct and relevant diagrams, but overall performance was let down by the lack of an example. For part b) very few candidates showed detailed knowledge of the network switch. Those that did tended to gain high marks as they were subsequently able to give correct examples and diagrams. Overall, the level of understanding of the network switch was either basic or not present. In several cases candidates sketched a diagram of a wall switch, indicating control was enabled by electrical supply.</p>
B12	
	<p>Responses to this question varied, students generally failed to identify cloud computing properly but could identify cloud types well.</p> <p>part c) explaining advantages and disadvantages of cloud. Candidates found difficulty in explaining disadvantages, with many answers focused on supplier bankruptcy or hacking, rather than particular disadvantages of the cloud. Marks could have been improved by placing additional focus on part c) of the question.</p>