

5.9 COMPUTER STUDIES (451)

5.9.1 Computer Studies Paper 1 (451/1)

NO	ANSWER	MARKS
SECTION A		
1.	The 2 nd generation use transistor in its logic circuit while the 3 rd generation used integrated circuit.	2
2.	Ways of ensuring proper ventilation in a computer room <ul style="list-style-type: none"> - Having large windows - Having windows and vent area opened - Using air conditioning equipment - Providing spacious seating arrangement <p style="text-align: right;">First 2 x 1</p>	2
3.	20.375 to binary $20 = 10100_2 \checkmark$ $.375 \times 2 = 0.750$ $.750 \times 2 = 1.500$ $.500 \times 2 = 1.000 \checkmark$ The integer digits read down = 011 $20.375_{10} = 10100.011 \checkmark$	3
4.	Ways to prevent viruses in a home computer connected to the Internet <ul style="list-style-type: none"> - Using antivirus shielding software - By surfing smart, i.e. those site which are credible - Using a firewall to deter unwanted packets from accessing the computer from the internet - Install anti-spyware to prevent real time spying of the computer - Not using storage media which has been used in suspicious computer - Using complex and secured password to restrict access - Enabling security settings of the bowser <p style="text-align: right;">First 3 x 1</p>	3
5.	Ways of transforming a picture in a PTP <ul style="list-style-type: none"> - Rotation - Flipping - Cropping - Stretching <p style="text-align: right;">First 3 x 1</p>	3
6.	Difference between a line printer and a page printer A line printer is an impact printer that prints one entire line of text at a time while a page printer is a non impact printer that prints a whole page at a time.	2
7.	Virtual Reality is the computer generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using a specialized electronic head gear.	2

NO	ANSWER	MARKS
8.	<p>Function of</p> <p>(a) Inbox : A storage location where new email messages are stored . @1</p> <p>(b) Draft : A storage location where messages composed but not yet sent are stored. @1</p>	2
9.	<p>(a) Toggle keys: These are keys that alternate the input mode. When pressed ON they are intended to perform a task, when OFF, they perform different task. @ 2</p> <p>(b) Example of toggle keys: Caps lock, Insert, Num Lock and Scroll lock.</p>	<p>First 2 x ½=1</p> <p>4</p>
10.	<p>(a) Transposition error</p> <p>(b) Transcription error</p>	2
11.	<p>Four factors to consider when selecting input devices.</p> <ul style="list-style-type: none"> - Compatibility with the existing system - Cost of the device - The extra features in the device - The purpose of the device - The speed in which input of data is required - The nature of data to be captured. <p>First 4x1</p>	4
12.	<p>Functions of UPS</p> <ul style="list-style-type: none"> - Protects devices against high or too low voltage. - Provides temporary power supply in case of sudden power outage - Processing wave form distortion. - Stabilizing the frequency - Surge protection. - Suppress transverse mode noise. 	<p>First 3 x 1</p> <p>3</p>
13.	<p>Distinction between page break and column break</p> <p>Page break is a code inserted by a WP program that instructs the printing device where to end the current page and begin the next.</p> <p>Column break is a feature that breaks a column and starts the next column.</p>	3
14.	<p>Factors to consider when selecting an operating system.</p> <ul style="list-style-type: none"> - The hardware configuration of a computer - The type of computer in terms of size and make - User friendliness of the operating - Number of users it can support - Number of processors and hardware it can support - Reliability and security provided by the OS. 	<p>First 3 x 1</p> <p>3</p>

NO	ANSWER	MARKS
15.	Distinction between Analogue data and digital data. Analogue data uses values that change continuously between to instances while Digital data are values that change from one value to the next in a step by step sequence.	2
TOTAL SECTION A		40

SECTION B (60 Marks)

MARKING SCHEME

NO	ANSWER	MARKS
SECTION B		
16. (a)	Meaning of dry running. Dry running is the process where a programmer manually works through a code to trace the values of variables and identify any error.	2
(b)	Properties of an algorithm. Finiteness: An algorithm must always terminate after a finite number of times steps. Definiteness: Each step must be precisely be defines using an action to be performed at each step of the algorithm. Input: Any operation performed needs beginning value associated with different activities in the operation. Output: An algorithm must have a form of output/results/expected value/qualities. <p style="text-align: right;">First 3 x 1</p>	3

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NO	ANSWER	MARKS
(c)	<pre> graph TD Start([Start]) --> Counter[Counter = 1] Counter --> Read[/Read Name Read Age/] Read --> Age{Age >= 18} Age -- T --> Print[/Print Name/] Print --> CounterInc[Counter = Counter + 1] CounterInc --> Age Age -- F --> CounterInc CounterInc --> CounterLeq{Counter <= 10} CounterLeq -- T --> Read CounterLeq -- F --> End([End]) </pre>	<p>10</p>

NO	ANSWER	MARKS
	Start = 1 Stop = 1 Initialize Counter = 1 Input name = 1 Input age = 1 Precise age = 1 Output name = 1 Decision Loop = 1 Increment = 1 Logic = 1 marks	
17. (a)	<p>Results of incorrect requirement specifications</p> <ul style="list-style-type: none"> - The system may be costing more than what was projected - The system will be delivered later than schedule - The system will not meet the user's expectation - The cost of maintaining and enhancing the system may be excessively high. - The system may be unreliable and prone to errors and downtime. - The system will not meet legal requirements. <p style="text-align: right;">First 4 x 1</p>	4
(b)	<p>Challenges that the school may face as a result of using direct change over.</p> <ul style="list-style-type: none"> - If something went wrong in the new system, there will be no fall back has the business has to stall till the problem is sorted. - There will be a period of time where no system is available because the old one is switched off and the new one is being switched on. - There will be a period of upheaval while the system is brand new and the school staff are finding their way around it. - There is a possibility of sabotage by staff since there is no time to monitor and manage resistance to the new system. <p style="text-align: right;">(First 3 x 2 marks)</p>	6
(c)	<p>Reasons for installing an intranet in an organization</p> <ul style="list-style-type: none"> - Used to isolate the organizational resources from the internet/security. - Used to provide communication and collaboration among individual within the organization/remote control. - Used to publish and share valuable information among the users easily, inexpensively and effectively via portals and intranet website/resource sharing. - Used to run critical applications that support business decision making. - Distributed processing facilities. - Cost Effectiveness. - Protects signal distortion. - Protects signal inteferance. <p style="text-align: right;">(First 3 x 1 = 3)</p>	3

(d)	Function of core insulation of a coaxial cable – Used for blocking electromagnetic fields from entering the cable and producing noise. – Provides insulation.	2
18. (a)	Required components to connect to a LAN – A network adapter/network interface card – Network medium/cable – RJ45 connectors/BNC/ST connector/SC connectors/Fibre local connector – Data points (sockets to plug in the cable) – Switch/Hub – Access point/TP link (First 3 x 1)	3
(b)	Ways of acquiring the graphs to use in a DTP – Using digital camera – Scanning the graphics from other sources – Downloading from the internet – Drawing from scratch/Drawing tools – Clip art – Another file (First 3 x 1)	3
(c)	(i) = Countif (D2 : D9, ">" & B4) Count those value in the range D2 :D9 with values greater than the value in cell B4). @ 2	4
	(ii) = Sumif (B3 : B11, "4M" D3 : D11) Sum the values in the cell range D3 : D11 for records whose corresponding values in cell range B3 : B11 equals to "4M"@2	
(d)	(i) Data types used in the table Product Number – Number/Autnumber/Text Product Name – Text/string Price – Currency/Number Product Description – Memo/Text/String 4 x ½	2
	(ii) Properties that can be set in the table design – Data type – Validation/Validation rule – Input mask – Setting required/null value status – Field size – Caption First 3 x 1	3

19. (a)	<p>Features of a GUI</p> <ul style="list-style-type: none"> - Windows – a rectangular area on the screen where the commonly use application run. - Icons – A picture or symbol which is used to represent a software application or hardware device. - Menus –a list of options from which the user can choose what that they require. - Pointer - a symbol such as arrow which moves around the screen as the user move the mouse. <p style="text-align: right;">(3 x 2 marks)</p>	6
(b)	<p>(i) Function of Caps lock - It's a toggle key when ON, the characters typed are in uppercase when OFF, the characters typed are in lower case. @1</p> <p>(ii) Shift key - Used to enable uppercase letter to be printed when alphanumeric keys are pressed. @1 - Used with other keys to modify behavior/function key.</p> <p>(iii) Home key - Used to take the cursor to the beginning of the line in a word processor. @1 - Evidence of movement of the cursor.</p>	3
(c)	<p>$25_{10} - 29_{10}$</p> <p>$25 = 0001\ 1001 \quad \checkmark$ $29 = 0001\ 1101 \quad \checkmark$ $2\text{'s Comp}(29) = 1110\ 0010 + 1 = 1110\ 0011 \quad \checkmark$</p> <p>Adding the two binary numbers</p> <pre> 0001 1001 1110 0011 ----- 1111 1100 ✓ </pre> <p>No carry bit hence 2's complement of the sum is obtained and the resulting is negative</p> <p>$2\text{'s Comp}(1111\ 1100) = 0000\ 0011 + 1 = 100_2 \quad \checkmark$ $= -4_{10} \quad \checkmark$</p>	6
20. (a)	<p>Computer aided instruction is an interactive instructional technique/ drill and practice whereby a computer is used to present the instructional material and monitor the learning that takes place.</p> <p>Computer aided learning is the use of computers to aid in the education or training.</p>	4

(b)	<p>(i) Activities that may be carried out when disposing an old system.</p> <ul style="list-style-type: none"> - Confidential information must be removed/Backup. - All accounts or access control facilities associated with the equipment must be destroyed. - Installation of the new system. - All potential clues such as configuration settings must be destroyed - Storage devices which had sensitive information should be destroyed. - The equipment to be disposed in proper manner. <p style="text-align: right;">(First 4 x 1)</p>	4
	<p>(ii) Ways of getting user specifications during system's design</p> <ul style="list-style-type: none"> - Sampling of existing documents - Conduct research and visits the sites - Observation of work environment - Use questionnaires - Conduct interviews - Use prototyping approach - Use Joint Requirement Planning (JRP) - Automated method <p style="text-align: right;">First 4 x 1</p>	4
(c)	<p>Benefits gained by music industry from advancement in technology.</p> <ul style="list-style-type: none"> - Few raw materials are used in the production of the media - No more need for big warehouses to store music materials - Delivery companies has less volume of deliveries - The use of online material is environmental friendly. <p style="text-align: right;">(First 3 x 1)</p>	3

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