KCSE 2012

28.0 COMPUTER STUDIES (451)

28.1 Computer Studies Paper 1 (451/1)

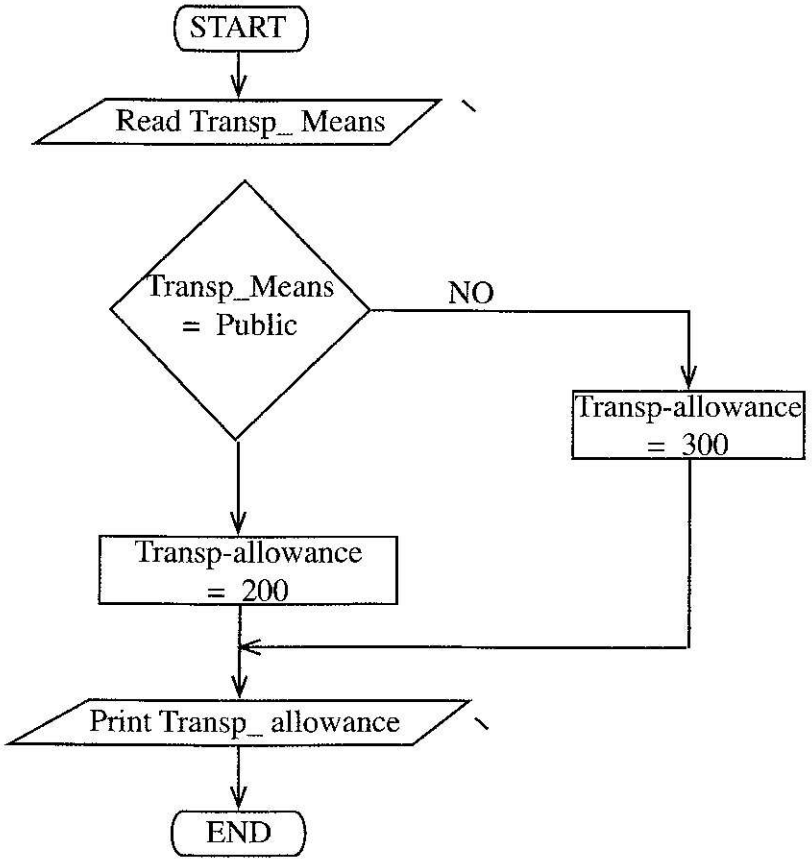
	Solution	Marks
1	(a) Tab: Moves the text ahead to the next tab stop or several stops ahead/ right/ forward. (b) Enter: Break the line after the word 'is' so that the word 'an' starts on a new line. - Words from "an" forms a new paragraph. (c) Home: Takes the cursor to the beginning of the line. - Nothing happens to the text	1 1 1 (= 3 marks)
2	- Computers can be automated or programmed. - Computers are fast. - Computers are capable of performing repetitive tasks. - Computers can store a lot of information. - Computers are accurate. - Can do dangerous tasks. - Give quality output. - Diligence /don't get tired/sick.	Any 4 x 1 (= 4 marks)
3	- They are more expensive. - They hold less volume of data. - They are volatile hence cannot store information once power is off. - Its shorter access time is dependent on the memory size hence increasing the size of primary memory will eventually lead to longer access time. - ROM cannot store data	Any 3 x 1 (= 3 marks)
4	(a) Point of sale system (POS)/Data base management system/stock control system/ sales management system. (b) Keyboard, barcode scanner, credit card reader. (c) - Transactions will be accurate. - Automatic updating of transactions. - Automatic updating of stock level. - Provide daily and periodical summaries for management use. - Improved security/limited access. - Easy of storage of files.	1 Any 2 x ½ = 1 Any 2 x 1 = 2 (= 4 marks)
5	(a) Impact printer/Dot matrix/Daisy wheel. (b) It prints by using spokes which hit the paper hard. The energy is transferred to attached carbon papers.	1 1 (= 2 marks)

6	File properties: - File types. - File extension. - File size. - Creating time/date of storage/saves time. - Owner/Account used. - Time of modification/date. - Usage conditions/File attributes (Read Only/Archives/Hidden). - Protection information. - Contents of the file - Access time.	Any 4 x ½ (= 2 marks)
7	- System infected with viruses which occupy memory space. - Many utilities are running in the background (e.g antivirus). - Many applications are opened. - RAM may be smaller than the required/part of RAM corrupted. - Corrupted Registry.	Any 2 x 1 (= 2 marks)
8	- Enactment of relevant laws to compact the vice. - Stiff penalties for those found in possession of pirated software. - Sensitize the public on the harm of using pirated copies. - Making software affordable/cheaper. - Certificates to identify the original software. - Use of keys,passwords to secure software products. - Restrict the number of installations.	Any 2 x 1 (= 2 marks)
	Solution	**Marks**
9	Hardware consideration: - Main memory size/volume/capability. - Hard disk size. - Available input devices. - Available output devices. - Processor specification ie. speed/type/hardware. - Monitor resolution. - Bandwidth for busses (e.g 64-bit) - Compatibility - Configuration - Warranty terms for hardware.	Any 3 x 1 (= 3 marks)
10	(a) Advantages: - Shifts time of processing to when computers are less busy. - No user input required hence no idle computer time as it awaits input. - Input is done once (batch). - Can enable use of hired equipment hence cost effective. (b) Batch processing. - Electronic.	Any 2 x 1 (= 2 marks) 1 (= 3 marks)

11	Advantages: - Can be used in the absence of human teachers. - Combines the expertise of many teachers hence more knowledgeable. - Reduces cost of hiring many teachers/serves many students. - Preservation of scarce expertise. - Students can learn on time.	Any 3 x 1 (= 3 marks)
12	- Encryption. - Firewalls. - User profiles/passwords/user. - Limit the number of log-in attempts. - Audit trail/tracking. - Physical protection of computers.	Any 3 x 1 (= 3 marks)
13	(a) Input mask: Is a layout/format that filters the data that can be entered in a field. (b) Default value: Used to specify the value that is automatically entered in a field when a new record is created.	1 1 (= 2 marks)
14	(a) Warranty: If a software has a problem then it can be replaced. If not working can be returned for repair. (b) Portability: To ascertain the compatibility with other systems.	1 1 (= 2 marks)
15	- Booking and reservations. eg. hotel, car, bus, air ticket. - Space explorations. - Intensive care units (hospital). (ICU) - Chemical plants/nuclear - Military security - Banking eg. ATM.	Any 2 x 1 (= 2 marks)
16	(a) Characteristic of scripting language: - Use of tags. - It is interpreted and not compiled. - Do not have declaration part. - User friendly -Are portable. -Must be embedded in the browser.	Any 2 x 1 (= 2 marks)

(b) Syntax Errors: Errors arising due to violation of language rules. Logical Errors: Errors arising from poor logic such as incorrect use of formulas/ semantic. Runtime Errors: Occur when there is abrupt interruption of running program. When the running program stops abruptly.	Any 2 (Error name 1 Description 1) (= 4 marks)

(c) (i) 1. Input transp_means 2. If Transp_means = Public Then Transp_ allowance = 200 Else Transp_ allowance = 300 3. Print Transp_allowance 4. Exit	1 1 1



½ inputs

1 decision

1 Alt. process

Alt Process

½ output

(= 4 marks)

	(iii) - Flowcharts require templates/complex symbols/special software while pseudo code requires only a text editor. - Drawing flowcharts takes a lot of time. - Flowcharts occupy more space. - Flowcharts permit development of logic sequences which cannot be coded using valid structured code. - Translation of flow charts into individual code is harder/difficulty.	Any 2 x 1 (= 2 marks)
	Total for Question 16	**15 marks**

17	(a) - Binary coded Decimal (BCD))(4 bits). - American Standard Code for information interchange (ASCII). - Extended BCD interchange code.(EBCDIC) - Unicode. .....- Standard BCD (6 bits)	Any 3 x 1 (= 3 marks)
	(b) (i) $1\,1\,0_2 = 4 + 2$ $= 6_{10}$ $0.1\,0\,1_2 = \frac{1}{2} + \frac{1}{8}$ Sum = $6 + \frac{1}{2} + \frac{1}{8}$ $= 6\frac{5}{8}$ or 6.625	1 1 1
	(ii) 12 2 6 R 0 2 3 R 0 2 1 R 1 2 0 R 1 0.6875 x 2 = 1.375 0.375 x 2 = 0.75 0.75 x 2 = 1.5 0.5 x 2 = 1.00 1100 + 0.1011 = 1100.1011_2	1 1 1 1
	(c) 1 1 0 0 1.0 1 0 1 1 1 0.0 1 1 0 0 1 1.0 0 0 1	1 order 1
	(d) COMP (I00101) = 0 1 1 0 1 0 + 1 0 0 1 1 0 1 0 1 1 0 1 1 1 0 1 0 0 0 Carry = 0 recomplement the answer 0 1 0 1 1 1 + 1 0 1 1 0 0 0	1 1 1
	Total for Question 17	**15 marks**
18	(a) (i) Cell margin: Its the space between the boundary of the cell and the text/ content inside the cell. (ii) Nested table: is a table created inside another table.	1 1

	(b) - In line with text. - Square - Behind text. - Infront of text. - Tight. - Through. - Top and bottom. - None.	Any 4 x ½ (= 2 marks)
	Solution	**Marks**
	(c) (i) Axis label: Data corresponding to the vertical or horizontal lines of a given chart whereas ie x-axis and y-axis. Data label: are data that provide additional information about a data marker which represents a single data point on a value that originates from a worksheet cell.	(= 2 marks)
	(ii) Cropping is the process of trimming/cutting/hiding vertical or horizontal edges of an object/picture while sizing is the process of enlarging/expanding or reducing/contracting an object/ picture to appropriate dimension.	(= 2 marks)
	(d) (i) = Product (B3:C3)=Product (C3,B3) (ii) = & B &8 * C5 + C5 = Product (&B &* *C5)+C5 (iii) = Count If (C2:C5 = 110) (iv) = Min (d2:d5)	1 2 2 2
	Total for Question 18	**15 marks**
19	(a) Surfing: Its the process of accessing /browsing/visiting internet resources like webpages. Uploading: Transferring files from a computer to a remote computer. Inbox: Folder/place in email system where incoming messages are stored/saved.	1 1 1
	(b) - Slower than a wired network. - The network can be less stable, wireless reception may be impaired by other wireless and wired devices within the network. - Risk of outsider accessing the network. - Very difficult to configure. - Very hard to secure. - Very hard to trouble shoot.	Any 3 x 1 (= 3 marks)
	(c) - Block in appropriate content/Firewall/Filter. - Set limits on downloads. - Monitor where children go online. - Counsel children eg. not talking to strangers online. - Supervise them. - Giving user accounts/passwords/log ins.	Any 3 x 1 (= 3 marks)

	(d) - Threat to privacy. Organisation "system admn" Can snoop into peoples mails. - Email can be unsolicited/spam mail. Messages can be sent to masses of people without their consents. - Vulnerability to machine failures. - Emails can be overwhelming when many messages are received leading to email overload and going through each of them can be taxing. - Email can be faked. - Email attached can be a source of viruses. - Email technology not available to all/Technology illiteracy. - Encourage illicit communication such as immoral behaviour.	Any 3 x 2 (= 6 marks)
	Total for Question 19	**15 marks**
	Solution	**Marks**
20	(a) Current system may be experiencing problems thereby being unable to meet organisation requirements. - New directives may be received from authorities and the organisation must comply. - Changes in the operating environment forces the organisation to change in order to fit and continue in business. eg. competition. - Changes in technology requiring the upgrading or total change in the existing system. - Peer pressure need to remain fashion	Any 3 x 2 (= 6 marks)
	(b) (i) Sample data should be provided so that all modules can be tested. (ii) Output reports show that the system actually works/testing process/expected output..	1 1
	(c) (i) Manual: Manual files stored in cabinets/books/paper/in-tray/out-tray . (ii) Electronic: Secondary storage devices/individual storage devices eg. Flash .	1 1
	(d) (i) Student: Master file/Parent/Reference File/Primary. Register: Transaction file/Child table/Secondary. (ii) Master file: Data is static/Permanent/Semi-permanent. Transaction file: Data is dynamic/Temporary/Changes frequently (iii) Key field: Student number/Admission No./Reg. No./File No.	1 1 1 1 1
	Total for Question 20	**15 marks**