

4.23 COMPUTER STUDIES (451)

4.23.1 Computer Studies Paper 1 (451/1)

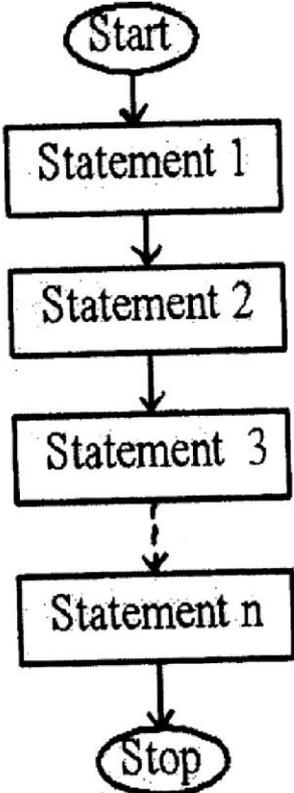
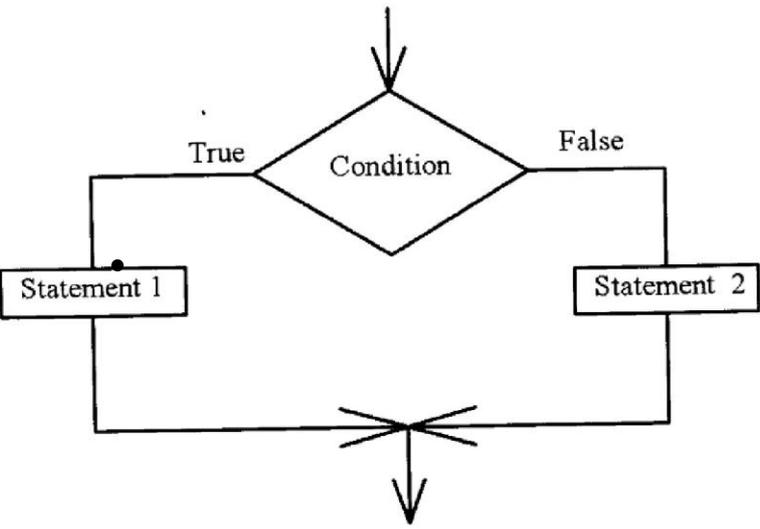
NO	ANSWER	MARKS
1.	Computer software <input type="checkbox"/> It is a set of programs written in a computer language to direct a computer on how to perform a particular task or behave in a certain way.	2
2.	Features of fifth generation computers <input type="checkbox"/> Use of expert system <input type="checkbox"/> Support the use of natural language <input type="checkbox"/> Support distributed computing <input type="checkbox"/> Support artificial intelligence and voice recognition. <input type="checkbox"/> Support parallel processing <input type="checkbox"/> Small in size/ portable <input type="checkbox"/> Superior hardware and software <input type="checkbox"/> consume less power (First 3 @ 1 mark)	3
3.	Difference between Home page and web page Home Page Web Page It's the first page that opens when a site is opened using the when the domain name. It is web document in a website/ Any page on a web.	2
4.	Characteristics of mainframe <input type="checkbox"/> They have bigger memory capacity. <input type="checkbox"/> Have high processing power. <input type="checkbox"/> It supports multiprocessing. <input type="checkbox"/> Supports large number of users at the same time/ Supports several peripheral devices. <input type="checkbox"/> Runs so many applications at the same time. (First 3 @ 1 mark)	3
5.	Factors to consider when purchasing a printer <input type="checkbox"/> Volume of work to be printed. <input type="checkbox"/> Maintenance cost below e.g. consumables like toners should be affordable. <input type="checkbox"/> Speed of printing. <input type="checkbox"/> Type of work to be printed; type of paper, paper size/user needs /range of capability. <input type="checkbox"/> Type of printout whether colour is required or not. <input type="checkbox"/> Compatibility with the existing hardware <input type="checkbox"/> Initial cost <input type="checkbox"/> availability of in the market <input type="checkbox"/> Portability / physical size (First 3 @ 1 mark)	3

NO	ANSWER	MARKS
6.	<p>Description of computer cables</p> <p>a) Parallel cable It is a communication cable which has high speed of transmission and transmits several bits at the same time.</p> <p>b) Serial cable It is a communication cable which has low speed of transmission and bits follow one another in sequence or are transmitted one at a time.</p>	<p>2</p> <p>2</p>
7.	<p>Precautions to be put in place in the lab to avoid dust</p> <ul style="list-style-type: none"> <input type="checkbox"/> Fit ventilating / air conditioning system to allow free circulation of air. <input type="checkbox"/> Fit curtains on the windows / add a curtain net to reduce dust entry into the laboratory. <input type="checkbox"/> Regularly use of a blower or vacuum cleaner/mop to blow dust from the computer parts. <input type="checkbox"/> Avoid entering the laboratory with materials that may have dust such as shoes. <p>(First 3 @ 1 mark)</p>	<p>3</p>
8.	<p>Meaning of proofreading</p> <p>It is the process of using appropriate proofing reading like spelling and grammar checkers and autocorrect features to check whether the document has typographical or grammatical errors.</p>	<p>2</p>
9.	<p>a) End Used for moving the cursor to the end of the line been typed or already typed.</p> <p>b) Insert key Used for changing typing mode from insert mode to type over and vice versa (Accept the description of type over and insertion)</p> <p>c) Backspace Used to delete a character to left of the cursor position.</p>	<p>1</p> <p>1</p> <p>1</p>
10.	<p>Problems of computer hard disk</p> <ul style="list-style-type: none"> <input type="checkbox"/> Excessive shock like dropping it on the hard surface may cause the platters to dislocate hence reading may be a problem <input type="checkbox"/> Contact with strong magnetic fields or static electricity may affect the device since data is saved magnetically. <input type="checkbox"/> If the case containing the platters is opened, dust may get into it causing disk crash, <input type="checkbox"/> Some viruses may create virtual tasks which will eventual cause the disk to be overwork hence causing it to crash <input type="checkbox"/> Sporadic power failure may cause the disk to crash. <p>(First 2@ 2 marks)</p>	<p>4</p>
11.	<p>a) =Count () •</p> <p>b) =Average ()</p> <p>NB Accept the any range given</p>	<p>1</p> <p>1</p>

NO	ANSWER	MARKS
12.	Three advantages of wireless media to the school <input type="checkbox"/> The school will find it easy to add or remove nodes on the system. <input type="checkbox"/> In case of new building is put up, there will be no need of interfering with the communication media. <input type="checkbox"/> Users will find it safer to move around as there are no wires around the rooms. <input type="checkbox"/> Students will be able to roam as they access the network. (First 3@ 1 mark)	3
13.	Password which cannot be hacked. <input type="checkbox"/> By including many characters in a password <input type="checkbox"/> By combining different characters in a password <input type="checkbox"/> Use password generator manager. (Any 2@ 1 mark)	2
14.	Ways of minimizing repetitive strain injuries. <input type="checkbox"/> Taking regular break intervals when using a computer. <input type="checkbox"/> Use an ergonomic keyboard to avoid stress. <input type="checkbox"/> Support wrist with wrist rest pad when using a mouse. <input type="checkbox"/> Use of standard furniture/proper sitting posture. (First 2@ 1 mark)	2
15.	Tasks achieved using DTP <input type="checkbox"/> Creating a calendar. <input type="checkbox"/> Creating a banner. <input type="checkbox"/> Creating a book cover. <input type="checkbox"/> Creating business cards (First 4 @ 1 mark)	2

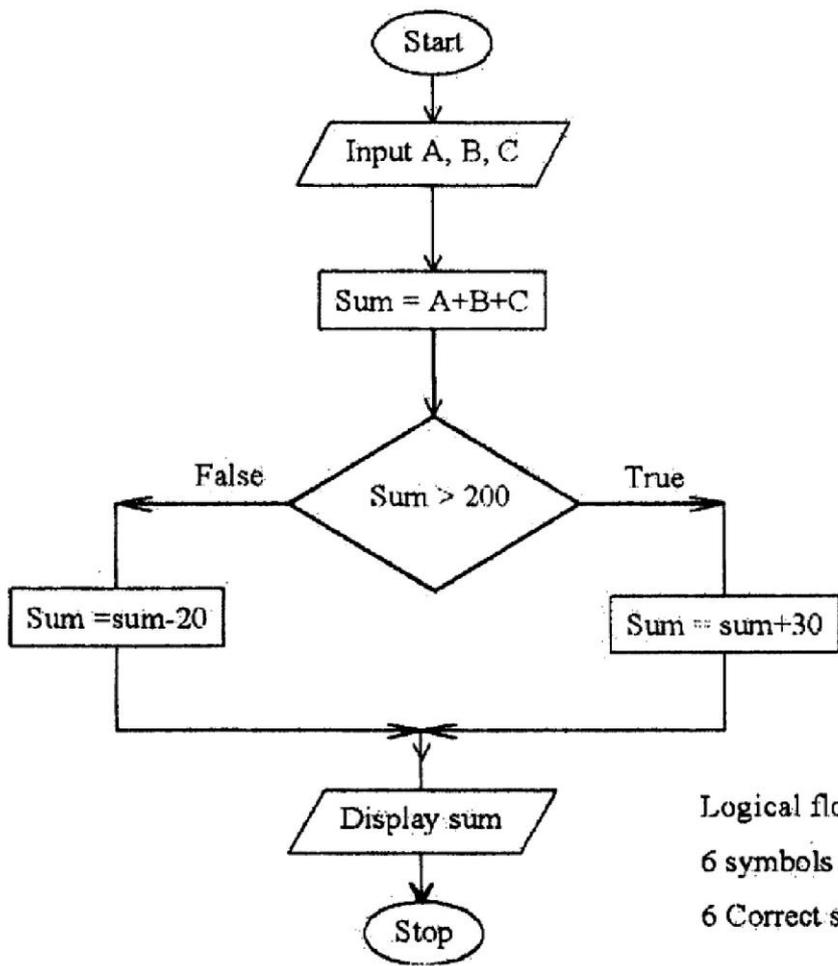
SECTION B

NO	ANSWER	MARKS
16.	(i) Qualities of a good pseudo code. <input type="checkbox"/> should be short and clear/ precise <input type="checkbox"/> should have start and end clearly shown. <input type="checkbox"/> Statements should be clearly defined. <input type="checkbox"/> should depict the logical flow of solving the problem. <input type="checkbox"/> should not be ambiguous. <input type="checkbox"/> it should be indented /neat / legibility (First 2 @ 1 mark)	2

NO	ANSWER	MARKS
	<p>(ii) Sequence</p> <p>a) Program statements are executed one after the other in the order in which they appear.</p> <p>Flowchart</p> <p>Flowchart</p>  <pre> graph TD Start([Start]) --> S1[Statement 1] S1 --> S2[Statement 2] S2 --> S3[Statement 3] S3 -.-> Sn[Statement n] Sn --> Stop([Stop]) </pre>	<p>2</p> <p>1</p>
	<p>b) Selection</p> <p>Flow of a program is determined by a choice of one of two or more options based on a condition given.</p>  <pre> graph TD In[] --> Cond{Condition} Cond -- True --> S1[Statement 1] Cond -- False --> S2[Statement 2] S1 --> Join[] S2 --> Join Join --> Out[] </pre>	<p>2</p> <p>1</p>

NO	ANSWER	MARKS
17.	<p>a) Arithmetic errors</p> <ul style="list-style-type: none"> <input type="checkbox"/> Truncation error Results due to shortening or leaving out part of a number or a word. <input type="checkbox"/> Rounding off error Arising by approximating a number by replacing it with a number that has fewer significant digits or one with zeros for its ending digits. <input type="checkbox"/> Overflow error Occurs when the results of a computation is larger than the allocated memory space. <input type="checkbox"/> Underflow error Type of error occurs when the output is low small to be represented in the chosen format. <p>(First 3 @ 2 marks)</p>	6

c) The flow chart



Logical flow @ 1
 6 symbols used @ 1/2=3
 6 Correct statements @ 1/2=3

7

NO	ANSWER	MARKS				
	<p>b) User interface design considerations</p> <ul style="list-style-type: none"> <input type="checkbox"/> Should be user friendly. <input type="checkbox"/> Colour, fonts and layout should be appealing to the user. <input type="checkbox"/> Consider a consistent layout in the entire system. <input type="checkbox"/> Should prompt user clearly. <input type="checkbox"/> Should capture the same number of items of data as indicated in the manual data capture form. <p>(First 3 @ 1 mark)</p>	3				
	<p>c) Types of maintenance</p> <p>(i) Adaptive Type of maintenance that is done to make the system to adopt the changing technology e.g. changing the system because to new o/s</p> <p>(ii) Perfective Type of maintenance done to make the system better in its operation e.g. adding a module in a system.</p> <p>(iii) Corrective Type of maintenance done to correct an error in the system e.g. wrong results during addition.</p> <p>(3 @ 2 marks)</p>	2 2 2				
18.	<p>(a) Distinction between microwave transmission and radio transmission</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: left;">Microwave</th> <th style="width: 50%; text-align: left;">Radio Waves</th> </tr> </thead> <tbody> <tr> <td>Microwave is a type of transmission that propagates its signals in one direction at a time</td> <td>radio transmission is a type of transmission that start from a central point and spread outwards over the covered area hence they travelling in all the directions from the source.</td> </tr> </tbody> </table>	Microwave	Radio Waves	Microwave is a type of transmission that propagates its signals in one direction at a time	radio transmission is a type of transmission that start from a central point and spread outwards over the covered area hence they travelling in all the directions from the source.	4
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Microwave is a type of transmission that propagates its signals in one direction at a time	radio transmission is a type of transmission that start from a central point and spread outwards over the covered area hence they travelling in all the directions from the source.					
	<p>b) (i) Bus topology</p> <p>(ii) A - The Bus cable It is a core section of the bus topology network which has all the nodes connected to it and data pass through it.</p> <p>B – Terminator It destroys data that does not reach its destination so that it doesn't cause echo back.</p>	1 2 2				

NO	ANSWER	MARKS
	<p>c) Problems related to power that should be addressed</p> <ul style="list-style-type: none"> <input type="checkbox"/> Blackout: This is unexpected discontinuation of power supply in the laboratory. <input type="checkbox"/> Power sage: Sudden drop of voltage levels that lasts less than a second. <input type="checkbox"/> Transients/ surge: High voltage flowing. <input type="checkbox"/> Brownout: Partial blackout where there's low voltage flow. <input type="checkbox"/> Short circuit: live wires touching each other's <input type="checkbox"/> Loose connection, which may cause tripping or total power failure (First 3 @ 2 marks) 	6
19.	<p>a) Possible responsibilities of a database admin in a school</p> <ul style="list-style-type: none"> <input type="checkbox"/> Carrying out school database backups. <input type="checkbox"/> Recovering of lost school data incase of system failure. <input type="checkbox"/> Ensuring the security and integrity of the school system. <input type="checkbox"/> Adding new users to the school system and managing the user's accounts. <input type="checkbox"/> Designing and developing database application for the school. <input type="checkbox"/> Updating or maintaining database for the school. (First 3 @ 1 mark) 	3
	<p>b) Ways in which computers can be used in a transport industry.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use of GPS to track vehicles, flights etc. <input type="checkbox"/> Bookings to different destinations can be done through the use of computers (online booking). <input type="checkbox"/> The computers can also be used to reduce the speed of vehicles and bring sanity in the industry. <input type="checkbox"/> Managing human resource involved in the industry. (First 2 @ 2 marks) 	4
	<p>c) Reasons for partitioning hard disk</p> <ul style="list-style-type: none"> <input type="checkbox"/> For security purposes, incase one partition fails the second partition remains functional. <input type="checkbox"/> If she requires backup copies to be stored in the same hard disk. <input type="checkbox"/> If she intends to install more than one operating system. (First 2 @ 2 marks) 	4
	<p>d) (i) Schedule feasibility</p> <ul style="list-style-type: none"> <input type="checkbox"/> To determine if the proposed solution can be developed within the required time. <p>(ii) Technical feasibility</p> <ul style="list-style-type: none"> <input type="checkbox"/> To determine if the system can be supported by the available technology. (2 @ 2 marks) 	4

NO	ANSWER	MARKS																														
20.	<p>a) Functions of information system in an organization.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Process data in an organization according to the policies and objectives. <input type="checkbox"/> Decision making by providing information that helps with strategic planning within the organization. <input type="checkbox"/> Means of communication and flow of information to various sections of an organization / enable sharing of information. <input type="checkbox"/> Improving quality of production, through the use of feedback mechanisms for counter checking the production with expected results. <p>(First 3 @ 2 marks)</p>	6																														
	<p>b) Benefits of using batch processing.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Output is increased because the processor work is uninterrupted. <input type="checkbox"/> Low cost of operation since the tasks are processed as a group. <input type="checkbox"/> Requires little supervision since the processing runs automatically as long as the instructions are given. <input type="checkbox"/> Less labour required since the process is automatic. <input type="checkbox"/> Efficient use of computer resources due to no idle time. <input type="checkbox"/> Gives company opportunity to check any error before processing begins. <p>(First 2 @ 2 marks)</p>	4																														
	<p>c)</p> <p>(i) Decimal equivalent</p> <table border="1"> <tr> <td>Bits</td> <td>1</td> <td>1</td> <td>1</td> <td>0</td> <td>1</td> <td>.</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>Place value</td> <td>16</td> <td>8</td> <td>4</td> <td>2</td> <td>1</td> <td>.</td> <td>0.5</td> <td>0.25</td> <td>@ 1</td> </tr> <tr> <td>Values</td> <td>16</td> <td>8</td> <td>4</td> <td>0</td> <td>1</td> <td>.</td> <td>0.5</td> <td>0.25</td> <td>29.75 @ 1</td> </tr> </table> <p>= 29.75₁₀ @ 1</p>	Bits	1	1	1	0	1	.	1	1		Place value	16	8	4	2	1	.	0.5	0.25	@ 1	Values	16	8	4	0	1	.	0.5	0.25	29.75 @ 1	3
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Values	16	8	4	0	1	.	0.5	0.25	29.75 @ 1																							
	<p>(ii) Binary operation</p> <p>11011₂ + 101₂</p> $ \begin{array}{r} 11011_2 \\ + \quad 101_2 \\ \hline 10000_2 \end{array} $	2																														

4.24.2 Computer Studies Paper 2 (451/2)

NO	MARKING POINTS	MARKS
1. (a)	<p>Typing values in the cells</p> <ul style="list-style-type: none"> ✓ Values in cell range A1: B6 @ 1 ✓ Margin cells A1:B1 @ 1 ✓ Text wrap in the title A1:B1 @ 1 ✓ Typing column 1 (range A9: A22) @ 1 ✓ Typing column 2 (range B9: B22) @ 2 ✓ Typing column 3 (range C9: C22) @ 1 ✓ Typing column 4 (range D9: D22) @ 1 ✓ Typing column 5 (range E9: E22) @ 1 ✓ Saving the workbook @ 1 <p>Column title text (row 8)</p> <ul style="list-style-type: none"> ✓ Typing column title text (correct, bolded and completeness-A8. H8) @ 2 ✓ Wrapping titles @ 1 ✓ Applying bold face @ 1 ✓ Applying borders to all the visible cells @ 1 	(15 marks)
(b)	<p>Naming the cells containing:</p> <ul style="list-style-type: none"> ✓ 1500 as SR @ 1 ✓ 2800 as DR @ 1 ✓ 3200 as VP @ 1 ✓ 300 as FR @ 1 	(4 marks)
(c) (i)	<p>=If (D9 = "S", C9* SR, if (D9= "D", C9 * DR, if (D9 = "V", C9 * VP)))</p> <p>Use of the IF function @ 1 S selection @ 2 D selection @ 2 V selection (else) @ 2 Logic and syntax @ 1</p>	(8 marks)
(ii)	<p>=If (E7 = "Yes", FR * C7, 0)</p> <ul style="list-style-type: none"> ✓ Use of the function @ 1 ✓ Selection of fridge @ 1 ✓ Alternative selection @ 1 	(3 marks)
(iii)	<ul style="list-style-type: none"> ✓ = G 7 * H7 @ 1 ✓ Applying other cells @ 1 	(2 marks)
(d)	<ul style="list-style-type: none"> ✓ Currency formats @ 1 ✓ Zero decimal formats @ <input type="checkbox"/> ✓ Formats applied in the correct range @ <input type="checkbox"/> 	(2 marks)
(e) (i)	<p>Copying the content of the current worksheet to sheet 2</p>	(1 mark)
(ii)	<ul style="list-style-type: none"> ✓ Rename sheet 1 as original @ 1 ✓ Rename sheet 2 as NEW @ 1 	(2 marks)
(f) (i)	<ul style="list-style-type: none"> ✓ Enabling <i>filter</i> feature @ 1 ✓ Filtering out correct records (displaying S values only) @ 1 	(2 marks)