4.23 COMPUTER STUDIES (451)

4.23.1 Computer Studies Paper 1 (451/1)

NO	ANSWER	MARKS
1.	**Computer software** ☐ 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** ☐ Use of expert system ☐ Support the use of natural language ☐ Support distributed computing ☐ Support artificial intelligence and voice recognition. ☐ Support parallel processing ☐ Small in size/ portable ☐ Superior hardware and software ☐ 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** ☐ They have bigger memory capacity. ☐ Have high processing power. ☐ It supports multiprocessing. ☐ Supports large number of users at the same time/ Supports several peripheral devices. ☐ Runs so many applications at the same time. **(First 3 @ 1 mark)**	3
5.	**Factors to consider when purchasing a printer** ☐ Volume of work to be printed. ☐ Maintenance cost below e.g. consumables like toners should be affordable. ☐ Speed of printing. ☐ Type of work to be printed; type of paper, paper size/user needs /range of capability. ☐ Type of printout whether colour is required or not. ☐ Compatibility with the existing hardware ☐ Initial cost ☐ availability of in the market ☐ Portability / physical size **(First 3 @ 1 mark)**	3

NO	ANSWER	MARKS
6.	**Description of computer cables** a) **Parallel cable** It is a communication cable which has high speed of transmission and transmits several bits at the same time. 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.	2 2
7.	**Precautions to be put in place in the lab to avoid dust** ☐ Fit ventilating / air conditioning system to allow free circulation of air. ☐ Fit curtains on the windows / add a curtain net to reduce dust entry into the laboratory. ☐ Regularly use of a blower or vacuum cleaner/mob to blow dust from the computer parts. ☐ Avoid entering the laboratory with materials that may have dust such as shoes. **(First 3 @ 1 mark)**	3
8.	**Meaning of proofreading** 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.	2
9.	a) **End** Used for moving the cursor to the end of the line been typed or already typed. 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) c) **Backspace** Used to delete a character to left of the cursor position.	1 1 1
10.	**Problems of computer hard disk** ☐ Excessive shock like dropping it on the hard surface may cause the platters to dislocate hence reading may be a problem ☐ Contact with strong magnetic fields or static electricity may affect the device since data is saved magnetically. ☐ If the case containing the platters is opened, dust may get into it causing disk crash, ☐Some viruses may create virtual tasks which will eventual cause the disk to be overwork hence causing it to crash ☐ Sporadic power failure may cause the disk to crash. **(First 2@ 2 marks)**	4
11.	a) =Count ( ) b) =Average ( ) NB Accept the any range given	1 1

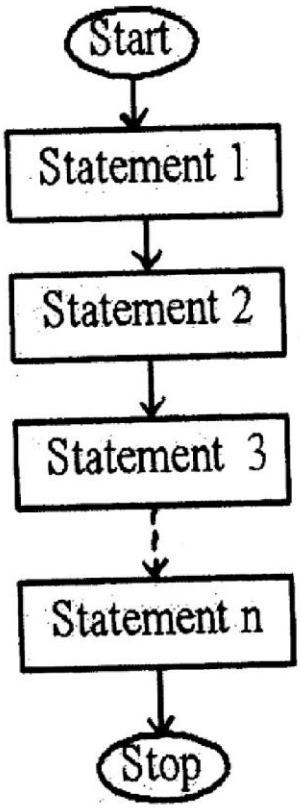
NO	ANSWER	MARKS
12.	**Three advantages of wireless media to the school** ☐ The school will find it easy to add or remove modes on the system. ☐ Incase of new building is put up, there will be no need of interfering with the communication media. ☐ Users will find it safer to move around as there are no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

SECTION B

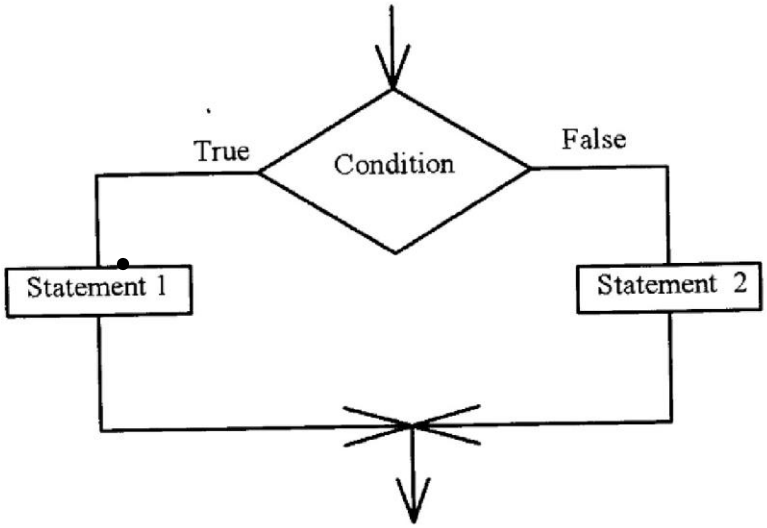
NO	ANSWER	MARKS
16.	(i) **Qualities of a good pseudo code.** ☐ should be short and clear/ precise ☐ should have start and end clearly shown. ☐ Statements should be clearly defined. ☐ should depict the logical flow of solving the problem. ☐ should not be ambiguous. ☐ it should be indented /neat / legibility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

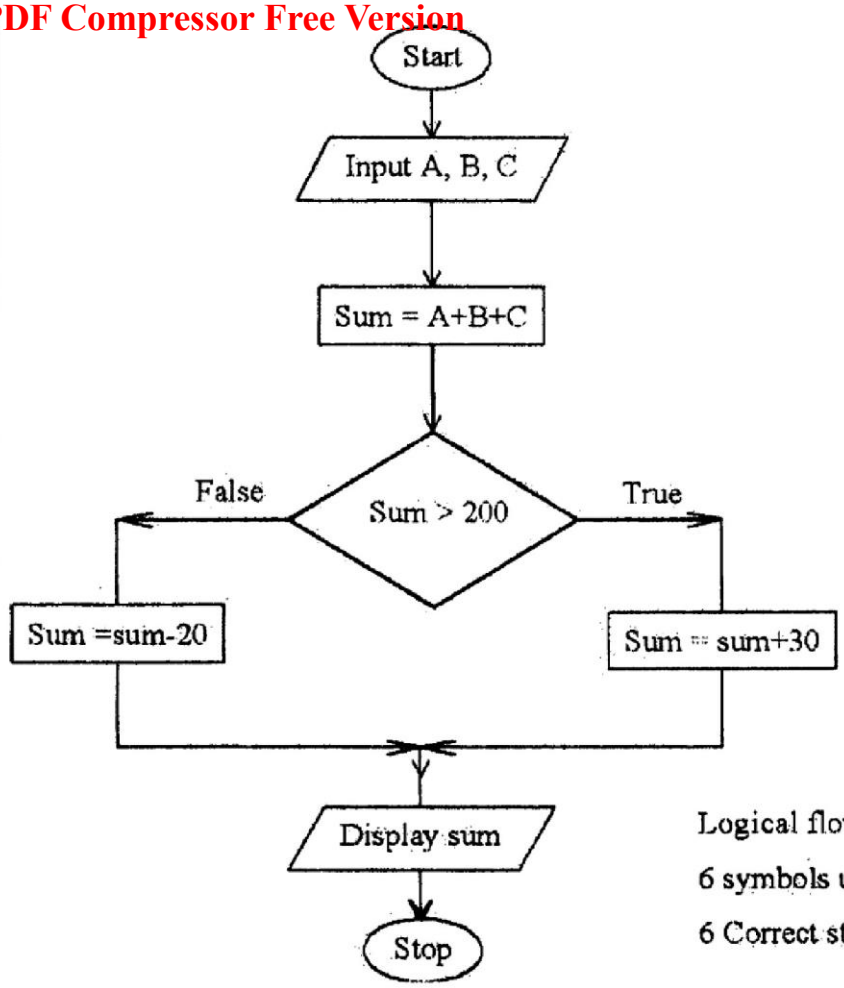
NO	ANSWER	MARKS
	(ii) **Sequence** a) Program statements are executed one after the other in the order in which they appear.	2
	Flowchart	1

Flowchart



	b) Selection Flow of a program is determined by a choice of one of two or more options based on a condition given.	2
		1



NO	ANSWER	MARKS
	c) The flow chart  Logical flow @ 1 6 symbols used @ ½=3 6 Correct statements @ ½ =3	7
17.	a) **Arithmetic errors** ☐ **Truncation error** Results due to shortening or leaving out part of a number or a word. ☐ **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. ☐ **Overflow error** Occurs when the results of a computation is larger than the allocated memory space. ☐ **Underflow error** Type of error occurs when the output is low small to be represented in the chosen format. **(First 3 @ 2 marks)**	6

NO	ANSWER	MARKS
	b) **User interface design considerations** ☐ Should be user friendly. ☐ Colour, fonts and layout should be appealing to the user. ☐ Consider a consistent layout in the entire system. ☐ Should prompt user clearly. ☐ Should capture the same number of items of date as indicated in the manual data capture form. **(First 3 @ 1 mark)**	3
	c) **Types of maintenance** (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 (ii) **Perfective** Type of maintenance done to make the system better in its operation e.g. adding a module in a system. (iii) **Corrective** Type of maintenance done to correct an error in the system e.g. wrong results during addition. **(3 @ 2 marks)**	2 2 2
18.	**(a) Distinction between microwave transmission and radio transmission**	4
	Microwave: Microwave is a type of transmission that propagates its signals in one direction at a time **Radio Waves**: 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.	
	b) (i) Bus topology (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. B – Terminator It destroys data that does not reach its destination so that it doesn't cause echo back.	1 2 2

NO	ANSWER	MARKS
	c) Problems related to power that should be addressed ☐ Blackout: This is unexpected discontinuation of power supply in the laboratory. ☐ Power sage: Sudden drop of voltage levels that lasts less than a second. ☐ Transients/ surge: High voltage flowing. ☐ Brownout: Partial blackout where there's low voltage flow. ☐ Short circuit: live wires touching each other's ☐ Loose connection, which may cause tripping or total power failure **(First 3 @ 2 marks)**	6
19.	**a) Possible responsibilities of a database admin in a school** ☐ Carrying out school database backups. ☐ Recovering of lost school data incase of system failure. ☐ Ensuring the security and integrity of the school system. ☐ Adding new users to the school system and managing the user's accounts. ☐ Designing and developing database application for the school. ☐ Updating or maintaining database for the school. **(First 3 @ 1 mark)**	3
	b) Ways in which computers can be used in a transport industry. ☐ Use of GPS to track vehicles, flights etc. ☐ Bookings to different destinations can be done through the use of computers (online booking). ☐ The computers can also be used to reduce the speed of vehicles and bring sanity in the industry. ☐ Managing human resource involved in the industry. **(First 2 @ 2 marks)**	4
	c) Reasons for partitioning hard disk ☐ For security purposes, incase one partition fails the second partition remains functional. ☐ If she requires backup copies to be stored in the same hard disk. ☐ If she intends to install more than one operating system. **(First 2 @2 marks)**	4
	d) (i) **Schedule feasibility** ☐ To determine if the proposed solution can be developed within the required time. (ii) **Technical feasibility** ☐ To determine if the system can be supported by the available technology. **(2 @ 2 marks)**	4

<table>
<tr><th>NO</th><th>ANSWER</th><th>MARKS</th></tr>
<tr><td>20.</td><td>a) Functions of information system in an organization.
☐ Process data in an organization according to the policies and objectives.
☐ Decision making by providing information that helps with strategic planning within the organization.
☐ Means of communication and flow of information to various sections of an organization / enable sharing of information.
☐ Improving quality of production, through the use of feedback mechanisms for counter checking the production with expected results.
(First 3 @ 2 marks)</td><td>6</td></tr>
<tr><td></td><td>b) Benefits of using batch processing.
☐ Output is increased because the processor work is uninterrupted.
☐ Low cost of operation since the tasks are processed as a group.
☐ Requires little supervision since the processing runs automatically as long as the instructions are given.
☐ Less labour required since the process is automatic.
☐ Efficient use of computer resources due to no idle time.
☐ Gives company opportunity to check any error before processing begins.
(First 2 @ 2 marks)</td><td>4</td></tr>
<tr><td></td><td>c)
(i) Decimal equivalent
<table>
<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>
= 29.75_{10} @ 1</td><td>3</td></tr>
<tr><td></td><td>(ii) Binary operation
$11011_2 + 101_2$
1 1 0 1 1
+ 1 0 1
1 0 0 0 0 0</td><td>2</td></tr>
</table>

4.24.2 Computer Studies Paper 2 (451/2)

NO	MARKING POINTS	MARKS
1. (a)	**Typing values in the cells** ✓ Values in cell range A1: B6 @1 ✓ Margin cells A1:B1 @ 1 ✓ Text wrap in the titleA1: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 **Column title text (row 8)** ✓ 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)	**Naming the cells containing:** ✓ 1500 as SR @ 1 ✓ 2800 as DR @ 1 ✓ 3200 as VP @ 1 ✓ 300 as FR @ 1	**(4 marks)**
(c) (i)	**=If (D9 = "S", C9* SR, if (D9= "D", C9 * DR, if (D9 = "V", C9 * VP)))** Use of the IF function @ 1 S selection @ 2 D selection @ 2 V selection (else) @ 2 Logic and syntax@1	**(8 marks)**
(ii)	**=If (E7 = "Yes", FR * C7, 0)** ✓ Use of the function @1 ✓ Selection of fridge @ 1 ✓ Alternative selection @ 1	**(3 marks)**
(iii)	✓ = G 7 * H7 @ 1 ✓ Applying other cells @ 1	**(2 marks)**
(d)	✓ Currency formats @ 1 ✓ Zero decimal formats @ □ ✓ Formats applied in the correct range @ □	**(2 marks)**
(e) (i)	Copying the content of the current worksheet to sheet 2	**(1 mark)**
(ii)	✓ Rename sheet 1 as original @ 1 ✓ Rename sheet 2 as NEW @ 1	**(2 marks)**
(f) (i)	✓ Enabling *filter* feature @ 1 ✓ Filtering out correct records (displaying S values only) @ 1	**(2 marks)**