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5.9 COMPUTER STUDIES (451)

5.9.1 Computer Studies Paper 1 (451/1)

SECTION A

NO	ANSWER	MARKS
1.	(a) Comparison of Numbers Arithmetic logic unit (b) Convert data into a computer digital format Input device (c) Coordinate operations of an entire computer Control Unit Operating system/system software 3 ×1	3
2.	**System files** – they are files that contain information that is critical for th operation of a computer system. 2 marks	2
3.	**Explanation of the term label in spreadsheets** - A label is any text or alphanumeric characters entered a cell of a spreadsheet entry to describe content of a column or row - a name given to a cell /block /range of cells. - Entry that cannot be manipulated mathematically. 2 marks	2
4.	**Measures required to prevent illegal access.** - Installation of firewal - Change password - Data encryption - Antispyware/antimalware/antivirus - Enforce user level security - Use biometrics - Using a strong password to restrict access to the computer documents - Use log files to establish intruders who commit crime and b reprimanded/audit trail - Create awareness to the rules and regulations that govern the use of computers. First 2 × 1 = (2 marks)	2
5.	**Total cost function** = Product (B2, C2) = product (B2:C2) = Product (B2*C2)	2
6.	**Ways of making text in a textbox visible in DTP** - Resize the text box - Contrast the back-colour with the fore- colour - Create another textbox and link it to the one with text/autoflo - Use fitting features available in the DT program. - Resizing text - Change font style (bold/italics) First 3 x 1 = (3 marks)	3

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<table>
<tr><th>NO</th><th>ANSWER</th><th>MARKS</th></tr>
<tr><td>7.</td><td>Software documentation
- It is a written text/instructions that accompanying computer software or embedded on a source code explaining how a software developed operates.
(2 marks)</td><td>2</td></tr>
<tr><td>8.</td><td>Types of errors during data processing
- Transcription errors
- misreading
- Transposition errors
- Computational errors
- Algorithmic errors/logical/semantic
First 3 x 1 = (3 marks)</td><td>3</td></tr>
<tr><td>9.</td><td>Duties of a web administrator in a media house
- Preparing media content
- Uploading media content
- Managing the content of the website
- Managing website user's accounts
- Ensuring security measures of the website
First 3 x 1 = (3 marks)</td><td>3</td></tr>
<tr><td>10.</td><td>(a) Explanation of the term time slice
– Time slice refers to the period which a job is allowed to run before the next job is processed in a time-sharing system.
(2 marks)
(b) Advantages of multiprocessing mode of data processing
– Enables efficient use of the process
– The user is able to run more than one task hence saving on time
– Increases reliability in the system
– Enables efficient use of processo First 2 × 1 = (2 marks)</td><td>4</td></tr>
<tr><td>11.</td><td>Diffe ence between transaction file and eport fil
<table>
<tr><th>Transaction fil</th><th>Report fil</th></tr>
<tr><td>- Its contents are temporary</td><td>- Contents are permanent</td></tr>
<tr><td>- Its contents are used to update the master fil</td><td>- Its contents are not used to update master fil</td></tr>
<tr><td>- Its contents can't be used in decision making</td><td>- Its contents can be used in decision making</td></tr>
</table>
First 2 pairs × 1 = (2 marks)</td><td></td></tr>
</table>

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12.	**Operations performed on a disk during disk formatting** - Delete existing partition - Assign drive letter - Make a drive to be primary partition - Insert drive labels - Extend partition of a drive - Create RAID volume - Create mirror volume - Merge partitions **First 3 x 1 = (3 marks)**	**3**
13.	**Softcopy output devices** – Speaker – Projector – LCD – Touch screen **4 × ½ = (2 marks)** **Hardcopy output devices** - Plotter - Printer **2 × ½ = (1 mark)**	**3**
14.	**Advantages of using a wireless computer keyboard** – No loose cables which distract a user – Keying in can be done from a far distance – Reduces space requirement – Allows a user to operate a computer from safe position – It is portable – Easily be used by other devices **First 3 x 1 = (3 marks)**	**3**
15.	**Objects of database application programs** – Table/ fil – Forms – Pages – Query – Module – Report – Macros **First 3 x 1 = (3 marks)**	**3**
	SECTION A TOTAL	**40**

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SECTION B (60 Marks)

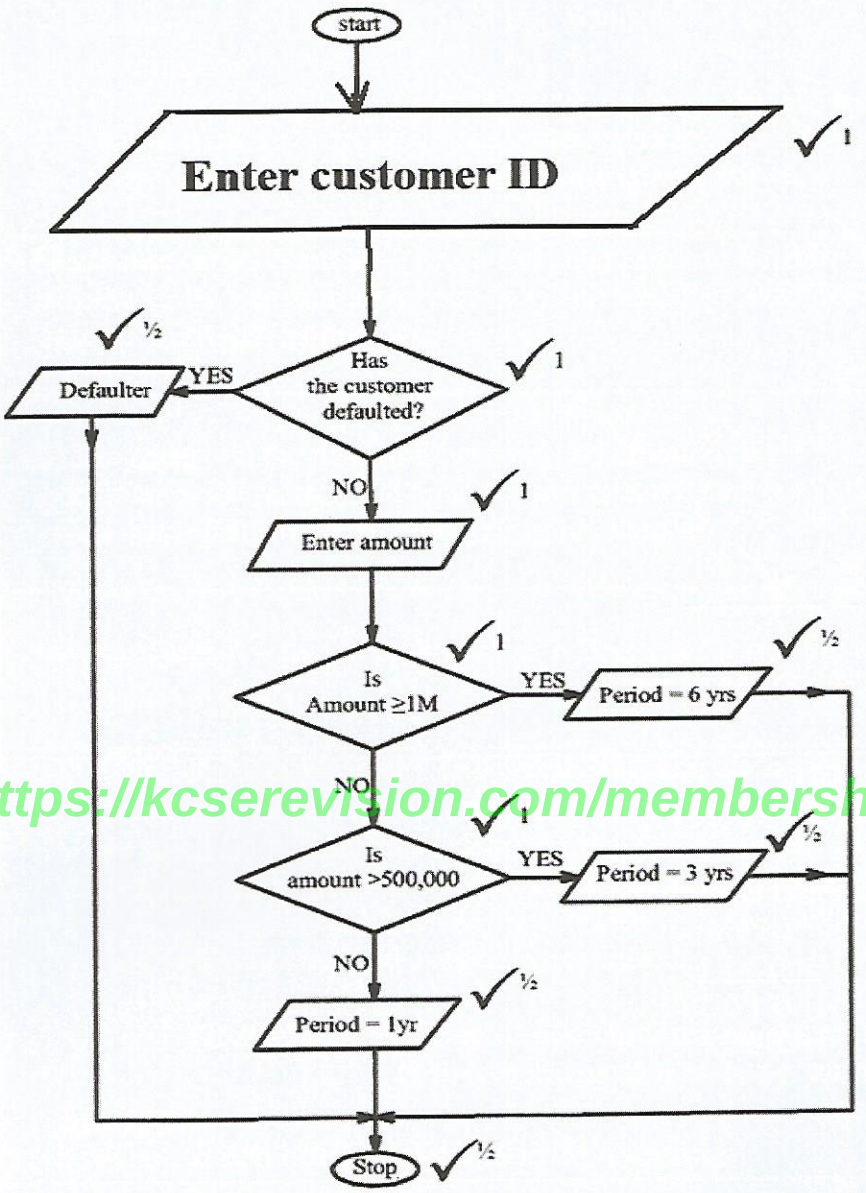
Question 16 compulsory and any other three

NO	ANSWER	MARKS
16. (a)	**Advantages of machine programming languages** – They do not occupy a lot of memory space – They are executed at a faster speed – They do not require a translator – Any other – Hardly crush / stable **First 3 × 1 = (3 marks)**	**3**
(b)	**Types of translators in programming** **Assembler** – It is used to translate programs in assembly language programs into computer understandable before execution. **Interpreter** – It is used for translating a source code program line by line while the CPU executes the translate line before going to be next one. – Translating high level language – Translating high level language **Compiler** – It is used for translating the entire source code into object then the CPU executes it. The program goes through the linking process to join the program to all other files – Translating high level language. **First 2 x 2 = (4 marks)**	**4**

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NO	ANSWER	MARKS
(c)	 Logic of the design ½ Total = 8 marks	8
17. (a)	– A nibble is made up of 4 bits e.g 1101 where as a byte is made of 8 bits, e.g 00001101 – A nibble represents a hexadecimal digit whereas a byte can represent two hexadecimal numbers. **Diffe ence @2** **examples @$^1/_2$×2 =1**	3

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NO	ANSWER	MARKS
(b)	(i) **Convert 11101.101_2 to decimal number** $1\ 1\ 1\ 0\ 1_2$ $=1\times2^4+1\times2^3+1\times2^2+0\times2^1+1\times2^0$ ✓½ $=16 + 8 + 4 + 0 + 1$ $=29_{10}$ ✓½ $0.1\ 0\ 1_2$ $= 1\times\frac{1}{2^1}+0\times\frac{1}{2^2}+1\times\frac{1}{2^3}$ ✓½ $= \frac{1}{2} + 0 + \frac{1}{8}$ $= 0.625_{10}$ ✓½ $11101.101_2 = 29.625_{10}$ ✓1	3
	(ii) $1110_2 - 1001_2$ 2's comp(1001) → $0110\sqrt{1}/_2 + 1$ $= 0111\sqrt{1}/_2$ Adding minuhend and subtrahend 1 1 1 0 + 0 1 1 1 0 1 0 1 $\sqrt{1}/_2$ dropped $= 0101_2\sqrt{1}/_2$ **(2 marks)**	2
(c)	**Diffe ence between BCD and EBCDIC** **BCD** - uses 4-bits - has no zone bits - Mostly used in simple electronic devices - Represents numeric data only - Represents 2^4 i.e 16 characters **EBCDIC** - uses 8- bits - has 4 zone bits - Used in computers - Represents alphanumeric data - Represents 2^8 i.e 256 characters **Any 2 × 2 = (4 marks)**	4

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NO	ANSWER	MARKS
(d)	**Smartphone features to enable video conferencing/lessons** – Camera – Microphone – Speakers – Application that supports video communication – High-capacity memory / adequate / enough memory **Any 3 × 1 = (3 marks)**	3
18. (a)	(i) **Electronic funds transfer** – It is a term that refers to the means of electronically transferring money from one banking institution to another/financial institution to anothe . **@ 2 marks**	
	(ii) **Blogging** – is the process of creating information in a communication platform in order to disseminate/share with other users of the same platform in a communication platform **@ 2 marks**	
	(iii) **Simulation** – Use of multimedia / ICT to mimic real life activities. **@ 2 marks**	6
(b)	**Diffe ence between pilot and parallel system change-over** – In pilot the new system is introduced in a branch or a section of the organization and tested to ascertain its effectiveness whereas in parallel the system runs together with the old one concurrently, the two are compared until one is satisfied with the performanc of the new system, the old system is terminated. **@ 4 marks** **(If any one definition o description award 2 marks)** **(Correct distinction award 4 marks)**	4
	(i) Activities carried out during implementation stage – Installing of new system – Training of users – Data transfer from the old system/data file conversio – routine maintenance evaluation of the new system **Any 3 ×1 = (3 marks)**	3
	(ii) Personnel involved in system implementation – The users/operators/technician – Data entry clerks – System analysts – Programmers – Trainers **Any 2 × 1 = (2 marks)**	5

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NO	ANSWER	MARKS
19. (a)	(i) **Diffe ences between a serial cable and a parallel cable** **Serial** - Less number of pins - Used for long distance communication - Slow - Less prone to error - Transmits one bit at a time **Parallel** - More pins - Used for short distance communication - Faster - Prone to error - Transmits 8 bits at a time **Any 2 × 2 = (4 marks)**	1
	(ii)**Other cables** – USB – VGA – PS/2 – HDMI – Power cables – Patch cables – SCSI – Firewire – Audio **Any 4 × ½ = (2 marks)**	2
(b)	https://kcserevision.com/membership-join/ **Qualities of information** (i) **Completeness** – Information should contain all facts that are necessary for decision making (ii) **Timelines** – Information should be delivered at the right place and at the right time. **2 × 2 = (2 marks)**	4
(c)	(i) **Word wrap** – It is a feature that makes a word to automatically start on a new line if it does not fit at the end of the current line **@ 1 mark** (ii) **Sort** – A feature used in arranging a set of elements/ items in a predefined orde . **@ 1 mark** (iii) **Indent** – A feature used to increase or decrease the distance of a paragraph/line from left to right margin. **@ 1 mark**	3

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NO	ANSWER	MARKS
(d)	**Protecting a hard disk from crashing** – Connecting the computer to a UPS system – disable unnecessary programs running in the background. – perform disk maintenance operation. – Installing an update antivirus – Frequently blowing away dust in computer – Always shutting down the computer using the right procedure – Avoid dropping the hard disk – Not exposing it to strong magnetic fiel – Not exposing it to heat – Not exposing it to moisture **Any 2 x 1 = 2 marks**	**2**
20. (a)	(i) **Bus network topology with a missing terminator** – Terminators missing leads to clogging of the bus by data packets that do not reach the destination. – Slow down the speed of transmission. (ii) **Uni-directional ring network** – One adjacent computer to the failed node will not send but may receive. – Communication will not take place (iii) **Star network topology with a hub not operational** – The whole network will be down. – Communication will not take place. **3 × 2 = (6 marks)**	**6**
(b)	**Benefits of using fi e optic** – Would be able to transfer large file – Less interference between the two sites – Faster transmission speed – Cable not prone to theft – Difficult to tap leaves droppi **Any 3 x 1 = (3 marks)**	**3**
(c)	(i) **Recycle bin** - This is a folder which stores deleted files and folders from a omputer. - The files or folders can be restored to their original locat on or emptied completely from the folder. **@ 2 marks** (i) **Patch** – it is a file with a line of code used to repair a defect with n a software without interrupting its proper operations. **@ 2 marks** (ii) **Tapping** – This term refers to unauthorized access to information or data that is on its way from the host computer to the destination computer. **@ 2 marks**	

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5.9.2 Computer Studies Paper 2 (451/2)

NO.	MARKING POINTS	MARKS
1. (a)	— Saving- network @ 1, other case @$^1/_2$ **Title: Computer Network** — Complete @ ½ — uppercase, @ ½ — Bold @ ½ — Centre @ ½ — underline @ ½	1 2.5
	Paragraph 1and 2 — complete@1*2No allowed clipboard formats could have been pasted. Other case @ ½	2
	Paragraph 3 - Bulleted text — Typing – Complete@1, other case @ $^1/_2$ — Strike through @ ½ — Bullets – tick @ 1 — Indent – bullets - in line with text½ — Title case@½	3.5
	Paragraph 4 — Typing – complete @ 1, other case @½ — Italics@ @ ½ — Bold @ ½-WAN, MAN & PAN	2
	WAN diagram — 6 cube shapes @ ½×6, no shades – in cubes @1= 4 — 6 text labels in the cubes @1 = 1 — 6 line connectors @½ - 3 — Cloud shape @ ½ , text -THE INTERNET @ ½ =1 — Line Weight – not hairline (all objects @1 — Layout (size, Text, objects arrangement) Cloud text label @ 2, position@1 = 3	13
	Paragraph 5: Physical topology — Typing title – complete @½, uppercase @½ =1 — Bold @ ½, Centre @ ½ = 1	2
	Star topology — Typing title - complete @½, underline @½ =1 — Typing text under the title @1, bullets – dots @½ = $1^1/_2$ — Indenting bullets – in line with text @ ½ — 1.5 line spacing@1	4

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NO.	MARKING POINTS	MARKS
	Ring topology — Typing title – complete @ ½, underline @½=1 — Typing - text @ 1 — Numbering - Roman numbers @ ½ — Indent- in line with text @ ½ — Correct selection @1, No. columns @½, line between @½ =2 — Layout (columns as seen on the stem) @1	**7**
	Hanging indent – 2cm/0.78" @1	**1**
(b)	**Table** — Dimension – 2*5 @ ½ layout (position table propts) @ ½ =1 — Titles – DIFFERENCE BETWEEN @ ½ — Shading @ ½, reverse text @½ = 1 — Typing star and ring @½ — Rotation 2 words @½ = 1 — Bolding 2 words @ ½ — Vertical + horizontal C_align@1 — 6 cells complete text @ ½	**8.5**
	Margins (i) Top - 1.27cm/0.5", bottom – 1.27cm/0.5" @ ½= 1	**1**
(c)	**Footer** (ii) COMPUTER NETWORKS@1,other case - @ ½ — Alignment- right Font size – 9pts, style – italics @ ½ = 1½	**2.5**
(d)	Printing – network @ 1	**1**
	TOTAL	**50**
2(a) (i)	Creating database and saving - CarHire@1	**1**

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NO.	MARKING POINTS	MARKS
(ii)	**Tables** **Customers table design** T_name: **Customers** @1, other case@½ = 1 Field Names – 2 correct@½*2=1 2 correct F_datatype and properties @½=1 Data entry- 4 correct records @ ½*4=2	5
	Drivers table – T_ name: Drivers@ 1, other case @ ½ =1 – Field names – 2 correct@ ½*2 =1 – 2 correct F_ data type and properties @½*2 = 1 – Data entry 4 correct records @ ½*4=2	5
	Vehicles table — T_name: vehicles @1, other case@½ =1 — Field names – 2 correct @½*2=1 — 2 correct fields_ datatype and properties @½*2=	3
(b)	**Data entry**- 4 correct records @ ½*4=2	2
	Expenses table — T_name: Expenses@ 1, other case @½=1 — Field names – 7 correct @ ½*7 =3½ — 7 Correct F_datatype and properties @½ *7=3½ Data entry -7 correct records @½ *7=3½	11.5
(iii)	Primary keys Customer ID, Driver ID, Vehicle ID-@1	3
(iv)	**Relationships** 3-one to many @3each @ ½=1½ 3-enforce relationship@½ = 1½	3
(v)	**Forms** — Saving – expenses form @ 1, other @½ =1 — Correct data source – expenses table @1 — Title expense entry@1, other case @½=1 — Bolded Title @1 — Italics – All fields @1, less fields	5
(c)	**Query** — Saving vcharges @1, other case@½ =1 — 4 correct fields (C_name, D_name, E_inc, Dis)@1@ =1	2
	Expression Calc_field: cha ges@1, other case @½=1 Param 1-: (DistanceCovered @½ Param 2- *15= @½ Param 3 - +(ExpensesIncurred) @½	2.5

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NO.	MARKING POINTS	MARKS
(d)	**Report** — Saving-vreport@1, other case@½ =1 — 4 fields-(C_name, D_name,E_Desc,E_Inc) @½=	3
	Summaries GrandTotal = (Expenses Incurred)@1	1
(e)	**Printing** — 4 tables @ ½*4=2 — 1 query- vcharges @ ½ — 1report - vreport @ ½	3
	GRAND TOTAL	**50**

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