Q1

(i)

- Providing a method of making back-up copies of important information
- Providing a method of transporting data between two computers/Providing Portability
- Storing software and data that is not required to be accessed frequently/ Archiving
- Copying information to be given to someone else
- Backing up of data to protect against unauthorized access.
- Providing a method to make multiple copies of data
- Providing method for extended storage

[Any two – 1 mark each]

(ii)

a. Simplex
b. Duplex
   - Half Duplex – Take turns – One is listing while the other is talking
   - Duplex – Both are talking – no effective communication

[2 marks -1 mark each]

(iii)

Input: purchase price of each item and the total amount mentioned in the Bill or bill

Process: add purchase prices together and compare it with the amount mentioned in the bill. Decide that it is incorrect.

Output: Inform the cashier that the bill is incorrect

[2 marks – Input, process, output]

[1 mark – if any **two** of input, process or output are correct]

if one no marks.

(iv)

- Efficiency/ Speed / Convenience of Data retrieval
- Improved Productivity
- Reduced Operational cost/ Cost saving /manpower/ reduced paper work/
- Easy of results analysis/statistical analysis
- Reliability/Accuracy/Reduction of Human Error
- Being able to know results from web quickly/ 24x7 availability or accessibility

[Any two – 1 mark each]

(v)

Binary → Decimal (repeated division by 16)

Answer CE

[2 or 0 marks]

OR

[No partial marks awarded for steps]

(vi)

2000 Octal

[2 marks]

OR

[1 mark If 1024 bytes mentioned and the final answer is in correct]

(vii)

(a)

A	B	A'	B'	A.B	(A.B)'	A'+B'
0	0	1	1	0	1	1
0	1	1	0	0	1	1
1	0	0	1	0	1	1
1	1	0	0	1	0	0

[1 mark]

(b)

A	B	A'	B'	A+B	(A+B)'	A'.B'
0	0	1	1	0	1	1
0	1	1	0	1	0	0
1	0	0	1	1	0	0
1	1	0	0	1	0	0

[1 mark]

OR

[Single table with all required columns and clear demarcation of the answers for t
questions [2 marks]]

(viii)

Tool Box	Animation
Layers	Gradient fill
Key Frame	Draw and edit objects
Color Mixer	create, place, and modify text and graphics

Table 1 *Table 2*

[2 marks – 4 correct links]

OR

[1 mark – at least 2 correct links]

No marks for one correct

(ix)

begin

i. Receiving money and instructions to buy bread/ Get Rs. 100.00 and a loaf of bread (inputs)
ii. Go to the shop
iii. Buy a loaf of bread
iv. Give Rs.100.00
v. Get the balance (if available)
vi. Go back home
vii. Give the loaf of bread and the balance (if any) to mother (outputs)

Process

End.

[1 mark for correct (**both**) Input and output]

[1 mark for correct process]

(x)

Identification of the problem/Preliminary Investigation

Feasibility study

[2 marks for the correct description of the two phases]

[1 marks if correct description of only one phase)

[1 mark if only the **TWO** phases listed without description]

Q2.

(i)

(Title/Book Name,)author, publisher, (ISBN /Accession Number/Inventory Number/Reference number), year of publication, Number of copies Available. (Classification Number/Category), Price

[2 marks- one mark for each item: Only one considered among the list in brackets/]

(ii)

(Admission number /ID number/ Membership number), (ISBN /Accession Number/Inventory Number/Reference number) and date borrowed

[3 marks- one mark for each item : Only one considered among the list in brackets/]

(All 3 essential with any point 1 marks.)
if one wrong 0 marks

(iii)

Data is unprocessed and the Information is processed data.

[1 mark - no partial marks]

(a) Example of data: a book's title, author, ISBN or student data ~~1 mark~~

(b) Example of information: how many students borrowed books on a day/ a week/ a month or in a year; what are the most or least frequently borrowed books, listing of overdue book, return date

[2 marks : 1 mark each for *a* and *b*]

OR

[No marks awarded for examples which are not relevant to the given library system]

~~(iv)~~

- Can create and maintain an online database for the library.
- More efficient and effective for all types of users/ stake holders such as library staff, students, principal.
- Less error prone/ more reliable.
- Takes less physical space
- Easy to take management/ summary information efficiently.

~~if one NO marks.~~

if one no marks

2 marks.

- Can keep backup copies of the system in a safer place to improve security of data,
- 24x7 accessibility from anywhere for checking list of books borrowed/reserving books,
- SMS/email reminders to borrowers on return dates,
- Improved physical security through RFID
- Convenience/Efficiency of borrowing the automated Self serviced borrowing with barcodes or RFID

[2 marks – Any two]

Q3

(i)

=C4+C5+C6+C7 OR +C4+C5+C6+C7

[2 Marks or 0]

(ii)

=D4+D5+D6+D7 OR +D4+D5+D6+D7

[2 marks or 0]

(iii)

=sum(F4:F7) OR =sum(F4.F7) OR +sum(F4:F7) OR +sum(F4.F7)

[2 marks or 0]

OR

=sum(F4,F5,F6,F7) OR +sum(F4,F5,F6,F7)

[1 mark or 0]

(iv)

=average(C4:F4) OR =average(C4.F4) OR =sum(C4:F4)/count(C4:F4) OR

+average(C4:F4) OR +average(C4.F4) OR +sum(C4:F4)/count(C4:F4)

[2 marks or 0]

OR

=average(C4,D4,E4,F4) OR +average(C4,D4,E4,F4)

[1 mark or 0]

(v)

Line chart/(Bar, Cylinder, Cone) chart/ Column chart

[2 Marks – 1 for each type]

Not marks for picture.

Q4

(i)

(a) No/false/N (½ marks)

(b) Yes (½ marks)

(c) ~~no~~ number of rounds (1 mark) *Note: any other variable names such as 'rounds' considered* ***incorrect***

(d) 10 (1 mark)

(e) Yes (½ marks)

(f) No (½ marks)

(ii)

Begin [½ for begin and end] (Begin & end – ½)

Get/Input/Read N [½ mark]

I= 0

Sum=0

Max = 0

Min = 100 [Initialization of all 4 variables ½ marks or 0 marks]

While i< N [While statement with correct condition and endwhile 1 marks or 0 marks]

Get/Input M [½ marks]

I = i+1

Sum = Sum + M [correct computation of both i and Sum ½ marks or 0]

If M < Min then Min = M [1 mark] End if (if no endif no marks)

If M> Max then Max = M [1 mark] End if

Endwhile End loop

Avegrage = Sum/N

Print/Display Average, Max, Min [Correct calculation of Average and Displaying the three variables ½ marks or 0]

End

Q5

(i)

Hacking, Malware or Malicious software (Virus/Trojan horses/ snoopware)

[1 mark for each] ~~if one listed no marks~~.

OR

[2 Marks]

(ii)

Installing (Virus Guard/Anti virus Application) or updating the Virus Guards Software, Operating System security patches/Installing Security Software

Installing Firewall

[2 Marks]

OR

[NO marks awarded if **only brand names** of Security Application Software mentioned (e.g installing XYZ)]

(iii)

Using Correct Seating Position to avoid back ache, using the correct screen position to avoid neck ache, positioning the screen to avoid glare from sun to avoid eye strain, avoiding the use of computer at a stretch to avoid Repetitive Stress Injury (RSI), exercising to avoid Repetitive Stress Injury (RSI), avoid use of loud sound using speakers/headphones over long period of time

[3 Marks]

(iv)

No, Piracy is illegal (3 marks no and justification)

[3 marks for No **and** Justification or 0 marks]

Q6.

(i)

Explain the possible use of magnetic resonance imaging (MRI), Computer-Aided Tomography (CAT), Electrocardiography (ECG), Electroencephalogram (EEG), Telemedicine, Surgical Simulation/Training Systems, e-channeling, (Hospital Administration/Patient, OPD Information Systems)

[2 marks 0 - 1 mark each]

OR

[Only listing of the **TWO** Applications without description -1 marks]

OR

[Correct Description of one application and no description for the other application - 1 mark]

(ii)

Using electronic content in teaching and learning, Use of Learning Management/e-learning systems, Conducting Online Exams/Assessments, Use of Computer Aided Learning(CAL) Systems, Use of Web based Training(WBT), use of TV programmes such as LearnTV, using ebooks, video conferencing in teaching and learning, use of Interactive white board in teaching and learning

[2 marks - 1 mark each]

[2 Marks]

(iii)

- Computer controlled farming
- Computer controlled Green House,
- Weather prediction using information systems,
- Pest control using information systems,
- Diary produces and food processing using information,
- Quality control of agricultural products using information systems
- eCommerce application in agriculture,
- providing agricultural information(pest control/equipment/market) using information systems or web
- Computer based or Web based training of farmers,
- A description of the use of mobile devices/WAP in agricultural information systems

[3 marks - 1 mark for each]

OR

[Listing of minimum 2 examples from each category **without** description – 1 mark]

(iv)

Cost and affordability, Internet accessibility, English language literacy, Computer literacy, negative attitude towards the use of internet, limitations in internet infrastructure development in Sri Lanka

[3 Marks- 1 mark for each]

OR

[Listing of minimum 2 examples from each category **without** description – 1 mark]

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