

மாகாணக் கல்வித் திணைக்களம், வடக்குமாகாணம்
 Provincial Department of Education, Northern Province

80 E I,II

கல்விப்பொதுத்தராதரப்பத்திர (சாதாரணதர) மூன்றாம் தவணைப்பரீட்சை 2025
 General Certificate of Education (Ord. Level) Third Term Examination, 2025

தகவல் தொடர்புத் தொழினுட்பவியல் I, II
 Information & Communication Technology I, II

மேலதிக வாசிப்பு நேரம்: 10 நிமிடங்கள்
 Additional Reading Time: 10 minutes

மூன்று மணித்தியாலம்
 Three Hours

Information & Communication Technology I

Instructions:

- Answer all questions
- In each of the questions 1- 40 pick one of the alternatives (1), (2), (3), (4) which is correct or most appropriate.
- Mark a cross (X) on the number corresponding to your choice in the answer sheet provided.

- 1) A school library's book management system, which is used with a computer, a monitor, a keyboard, and a mouse. It is wants to minimize the time taken presently for book lending/returning a book. Which of the following is most suitable for this purpose?

- (1) Using an external hard disk (2) Using a touch screen
 (2) Using a barcode reader (4) Using a light pen

- 2) Consider the following devices.

- A. Printer
 B. Monitor
 C. Projector
 D. Scanner

Which of the above are Output devices?

- (1) A, B Only (2) A, B, C Only (3) A, C Only (4) A, B, C, D All

- 3) Listed below are some statements about the internal operation of the printers:

- A. Toner attracting to what is printed on a cylinder which is then transferred to paper.
 B. A moving print head striking an ink ribbon against the paper.

Which of the following printer correctly matches to the above statements?

- (1) A - Laser, B - Inkjet (2) A - inkjet, B - Laser
 (3) A - Inkjet, B - Dot matrix (4) A - Laser, B - Dot matrix

- 4) Consider the following four files of the given size.

exam.mp3 (12GB), archive.zip (30GB), grade11.pdf (1024MB), drama_collection.mp4 (256GB)

After storing these files, the remaining memory on a 1TB Solid State Drive (SSD) is approximately

- (1) 299GB (2) 2560MB (3) 725GB (4) 725GB

- 5) The hexa decimal equivalent of octal number 231_8 is

- (1) 99_{16} (2) 97_{16} (3) $7B_{16}$ (4) $7A_{16}$

6) which of the following are 10101111_2 , 124_8 , 150_{10} , $2B_{16}$ listed in ascending order?

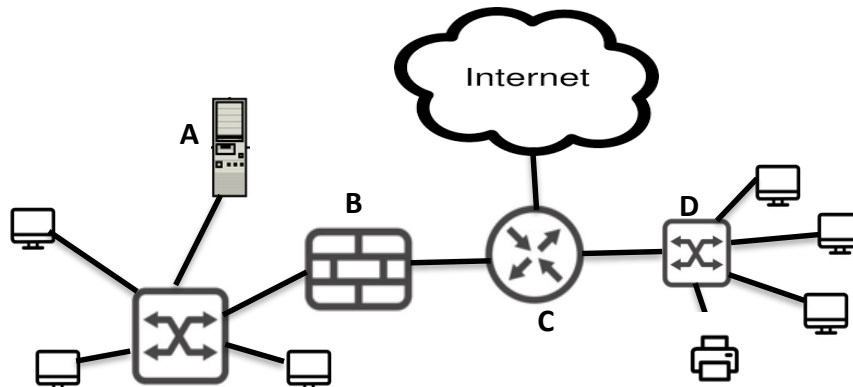
- (1) 124_8 , $2B_{16}$, 10101111_2 , 150_{10}
- (2) $2B_{16}$, 124_8 , 150_{10} , 10101111_2
- (3) $2B_{16}$, 124_8 , 10101111_2 , 150_{10}
- (4) 10101111_2 , 124_8 , 150_{10} , $2B_{16}$

7) The following table contain two English words and their binary representations according to the ASCII code. what is the binary representation of word 'ICT'?

Word	Binary Representation
IC	01001001 01000011
IT	01001001 01010100

- (1) 01010100 01000011 01001001
- (2) 01001001 01000011 01010100
- (3) 01010100 01001001 01000011
- (4) 01010100 01000011 01010100

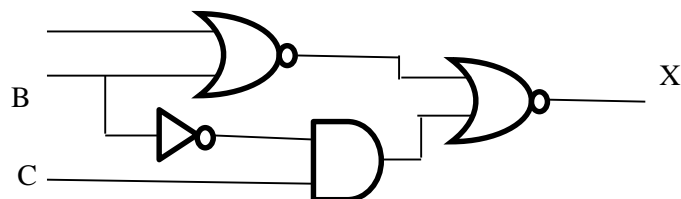
8) The following diagram shows a computer network connected to the internet



which of the following gives a correct of the devices A-D?

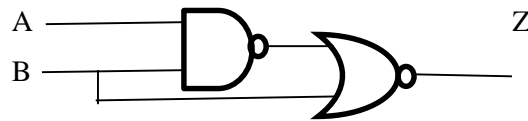
- (1) A – Router, B – Switch, C – Firewall, D – Server
- (2) A – Firewall, B – Router, C – Switch, D – Server
- (3) A – Server, B – Firewall, C – Router, D – Switch
- (4) A – Switch, B – Firewall, C – Server, D - Router

9) Which of the following Boolean expressions represents the output X of the given Logic Circuit?



- (1) $X = \overline{\overline{A} \cdot \overline{B}} + \overline{B} \cdot C$
- (2) $X = \overline{\overline{A} + \overline{B}} + \overline{B} \cdot C$
- (3) $X = \overline{\overline{A} + B} + B \cdot C$
- (4) $X = \overline{(A + B)} + B \cdot C$

10) Which of the following truth table is equivalent to the Logical circuit given there?



1)

A	B	Z
0	0	0
0	1	0
1	0	0
1	1	0

2)

A	B	Z
0	0	0
0	1	1
1	0	1
1	1	0

3)

A	B	Z
0	0	0
0	1	0
1	0	0
1	1	1

4)

A	B	Z
0	0	0
0	1	0
1	0	1
1	1	0

11) Which of the following is not an advantage of Disk Partition?

- (1) Can allocate a separate portion for operating system
- (2) Non continuous spaces can be joined
- (3) Can access data quickly and efficiently
- (4) Can change operating system without deleting all the data

12) Shana switched on a computer and started using web browser. After a while she started Pascal as well. which of the following gives a sequence of different processes that ran on the processor of that computer?

- (1) Ubuntu → BIOS → Webbrowser → Pascal → Webbrowser
- (2) BIOS → Webbrowser → Ubuntu → Pascal → Ubuntu
- (3) BIOS → Ubuntu → Webbrowser → Ubuntu → Pascal
- (4) BIOS → → Ubuntu → Webbrowser → Pascal

13) Which of the following statement(s) is / are true?

- A. Open Office Writer is a word processing Software.
- B. Text entered in a table cannot be formatted.
- C. Ctrl+A select all the content in a document.

- (1) A and B only
- (2) B and C only
- (3) A and C only
- (4) All are correct

14) Portrait and Landscape in a word processing software are called

- (1) Page Orientation
- (2) Paper Size
- (3) Page Layout
- (4) Page Margin

15) Which of the followings will be the result if you hit Ctrl+Backspace keys while typing a document in english using a word processing software?

- (1) It deletes the letter to the left of cursor
- (2) It deletes the letter to the right of cursor
- (3) It deletes the word to the left of cursor
- (4) It deletes the word to the Right of cursor

- Question 16 & 17 are based on the following part of a spreadsheet

	A	B	C	D
1	Name	Overtime hours / week	Unit rate	total overtime
2	A	10	100.00	
3	B	-	100.00	
4	C	15	100.00	
5	D	8	100.00	
6	E	-	100.00	
7				
8				

- 16) Which of the following formula should be entered in cell B7 to find the number of numeral entries within B2 and B6 cell range
 (1) Count (B2:B6) (2) = CountA (B2:B6) (3) = Rank (B2:B6) (4) =Count (B2:B6)
- 17) Which of the following is/ are correct formula to enter in the cell D2?
 A- =B2*C2 B- = Sum(B2:B5) C- = B2*\$C4 D- B2*C2
 (1) A only (2) C Only (3) A, C Only (4) All the above
- 18) Which of the following shortcut key used to move to the first used cell in the excel worksheet?
 (1) Ctrl + Home (2) Ctrl + page up (3) Shift + Tab (4) Ctrl + F
- 19) A Student spend 10 mins to read and understand the question and 30 mins to write the answers and another 15 mins to check the answers. Which graph can be used to display the percentage of the each activity done by the student
 (1) Line chart (2) Column chart (3) Pie chart (4) XY(Scatter) chart
- 20) Which of the following is not a suitable advice to follow when making a slide presentation?
 (1) Add as many images as you want to a slide.
 (2) Limit the number of lines of text to 9 on a slide.
 (3) Use a bright red color throughout the presentation.
 (4) Use lots of loud animations.
- 21) In electronic presentation, what is the feature used when moving from slide to slide?
 (1) Slide Layout (2) Animation (3) Slide Design (4) Slide Transmission
- 22) Consider the following statements about Relational database
 A. Two tables should have primary key to have a relationship.
 B. The cardinality type of the relationship can be determined by finding the relationships between records.
 C. Foreign key of a table can be a part of the composite key of the same table.
 Which of the above are correct?
 (1) A, B Only (2) B, C Only
 (3) A, C Only (4) A, B, C All

- Consider the following database tables and answering questions 23 and 24.

Employee

EmpNo	EmpName	Position
E1001	Thuvarahi	Software engineer
E1009	Varnavan	HR Manager
E1016	Thuanush	Marketing specialist
E1021	Aathuri	Software engineer
E1024	Kapiraj	Assembly head

Company

CompanyID	CompanyName
101	Industrial
202	Healthcare
201	Finance
303	Technology

Experience

EmpNo	CompanyID	Years
E1001	303	3
E1009	201	2
E1024	303	5
E1009	202	2

23) What is the cardinality of the relationship between Employee table and Company table?

- (1) m:m (2) m:n (3) 1:m (4) 1: 1

24) Which of the following attribute/s act as foreign key and composite key?

- (1) Employee table EmpNo
 (2) Company table CompanyID
 (3) Employee table EmpNo, Company table CompanyID
 (4) Experience table EmpNo, CompanyID

25) What would be the output of the following pseudo code?

- (1) 15
 (2) 25
 (3) 55
 (4) No output will be received.

```

Begin
    sum=0
    a=1
    while a<=5
        sum=sum+a
    endwhile
    a=a+1
    Display sum
End
  
```

26) What will be the output if the following Pascal code is executed?

```

var a, b, c, result: integer;
begin
    a := 10; b := 4; c := 6;
    result := a * (b + c) DIV b;
end.
  
```

- (1) 12 (2) 12.5 (3) 20 (4) 25

27) How many times does the word "School" appear as a result in the Pascal code given below?

- (1) 2
- (2) 3
- (3) 4
- (4) 5

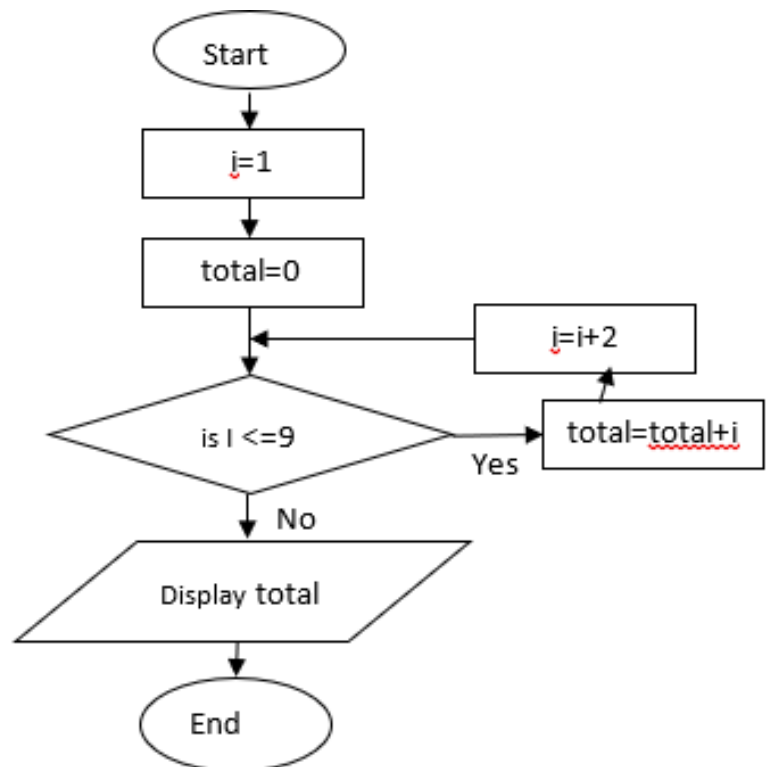
```
Var X:integer;  
Begin  
    X:=1  
    while X<=4 do  
        begin  
            Writeln("School");  
            X:=X+1;  
        end  
    Readln();  
End
```

28) What would be the output of the following pseudo code?

- (1) 45, 20, 0
- (2) 50, 40, 30
- (3) 35, 15
- (4) 55, 35

```
Begin  
    x = 10  
    num = 50  
    Until x >= num  
        x = x + 5  
        num = num - x  
    Print num  
repeat  
End
```

29) what is the output of the following flow chart?



- (1) 10
- (2) 45
- (3) 25
- (4) 30

30) Consider the following array Num in Pascal:

Num=	10	15	20	25	30	35	40	45
------	----	----	----	----	----	----	----	----

- A. The Length of the array num is 8.
- B. The value of Num[4] is 25.
- C. The value of Num[2]+ Num[5] is 60.

(1) AOnly (2) A,B Only (3) B, C Only (4) A, B, C All

31) What control structure is used in programs to get your name printed ten times without having to type the same code over and over again?

A) repeat .. until B) while .. Endwhile C) Sequential D) for-loop

(1) A Only (2) A, B Only (3) A,B, C Only (4) A, B, D Only

32) Which of the following statements are true with regard to the pilot deployment of a new software system?

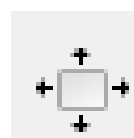
- (1) The new system is deployed in stages and the success of each stage leads to the next stage.
- (2) Introduce the newly developed system to a selected set of users before making it available to all.
- (3) The existing system is replaced by the new system as soon as its development is completed.
- (4) Both the new system and the old system will be introduced at the same time and will continue to run for a short period of time.
- (5) Statement 1 and statement 2 are correct.

33) How many colours can be used in a digital graphic that has 16bits per pixel?

(1) 2 X 16 2) 2^{16} 3) 1677716 4) 255 X 256

34) Which tool is used to copy one part of a graphic to another part in GIMP?

(1) (2) (3) (4)



35) What is a cloud computing service used to build a software system?

(1) PaaS (2) IaaS (3) SaaS (4) WaaS

36) Consider the HTML tag shown below.

```
<img src= "image\lilly.jpg" alt= "flower" width= "200" height= "100">
```

- A. The above HTML tag provides the browser with the image name as 'lilly.jpg'.
- B. The browser does not have information about the size of the image.
- C. When the image is not displayed, the alt attribute shows information about the image.
- D. The image named 'lilly' is inside this HTML file.

The correct statement(s) among the above.

- (1) A, C only (2) C, D only (3) A, C, D only (4) A, B, C only

37) From the following HTML tags, select the tag that does not require a closing tag.

- (1) <p>,
 (2)
,<hr> (3) <hr>,<h1> (4) <p><hr>

38) What is the tool used to attach other electronic files along with an email?

- (1) Subject (2) Sent (3) Spam (4) Attachment

39) Which cannot be considered a web browser?

- (1) Safari (2) UC Browser (3) Google (4) opera

40) Which of the following statements is correct?

- (1) It is not illegal for multiple users to use a single user license on a computer.
- (2) It is a good idea to dispose of electronic waste such as unusable televisions and telephones along with household food waste.
- (3) The digital divide is the division between people regarding computer usage.
- (4) Cloud computing is used to control access to computers by other people.

தகவல் தொடர்பாடல் தொழினுட்பவியல் I,II
Information & Communication Technology I,II

80	E	I,II
----	---	------

- ✿ Answer five questions Only, including FIRST question and FOUR other questions.
- ✿ First question carries **20marks** and each of the other questions carries **10 marks**

(i) Aswin bought a storybook at the book shop. Then, Scan QR code of the book by using his mobile phone and logged into the internet to get more information about the book. Give an Input and a Output of above statement of the system?

(a) Draw the truth table of the boolean expression $Q = \bar{A}B + \overline{AB}$

```

graph LR
    X --> AND1[AND]
    Y --> AND1
    AND1 --> P
    Z --> OR1[OR]
    P --> OR1
    OR1 --> Q
  
```

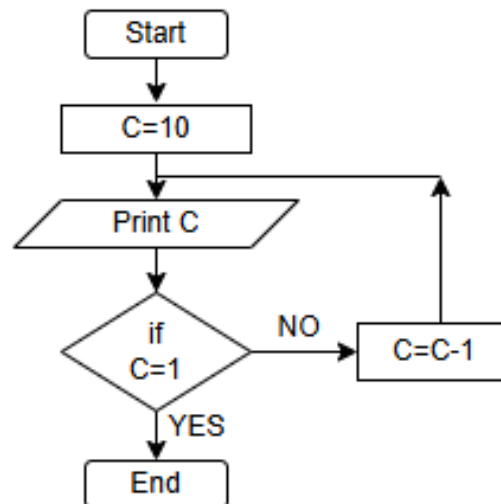
RAM, Magnetic tape, Cache memory, DVD, Flash drive

b) Write the shortcut key for the above answer of question (a)?

<U>School</U>

Write down the testing type by the above labels A, B and C?

- (ix) The computers need to be used carefully. Careless use of computer is likely to bring about both Physical and Logical issues. Write two Physical security methods for computers and two Logical security methods for Data?
- (x) Write the output of following flowchart?



02. The following spreadsheet shows the details of the fees charged by doctors at a private hospital.

	A	B	C	D	E	F	G
1	JPJR Medical Centre						
2	Date	12/31/2024			Center Charges	20%	
3	Maximum Doctor charge Amount		2500.00				
4	DoctNo	DoctorName	No of Patients	Doctor Charge	Total Charge	Center Charge	Doctor Fees
5	D102	Dr. Innijavan Asanikka	43	2500.00	107,500.00	21,500.00	86,000.00
6	D104	Dr. Anula Wijesundere	32	2000.00	64,000.00	12,800.00	51,200.00
7	D107	Dr. Varnava Ratnajake	37	2500.00	92,500.00	18,500.00	74,000.00
8	D110	Dr. Shana Akshaya	26	2300.00	59,800.00	11,960.00	47,840.00
9	D115	Dr (Mrs). Sarath Nitharsha	18	1800.00	32,400.00	6,480.00	25,920.00
10	D120	Dr. Ashal Kuperaa	29	2500.00	72,500.00	14,500.00	58,000.00
11	D125	Dr. Indika Kamini	32	2500.00	80,000.00	16,000.00	64,000.00
12	D130	Dr (Mrs). K.Sivagnanam	15	2000.00	30,000.00	6,000.00	24,000.00
13						107,740.00	430,960.00
14		Total Parients	232				
15							
16							

- (i) What formula should be written in cell E5 to find the income received by Dr. Innijavan Asanikka from channel service?
- (ii) If 20% is charged as center charges out of the total charges received from a doctor for facilitating the channel service, write the formula to find the center charges in cell F5? (copying this formula should also enable to find the center charges of other doctors)

- (iii) Write down the formula that should be written for each of the following.
- For cell G5 to find the charges of Dr. Innijavan Asanikka?
 - For cell G11 to find the charges of Dr. Indika Kamini?
- (iv) Write down the formula to find the total center charges in F13 as =Function(cell1:cell2)
- (v) If a chart is prepared to show the income that received from each doctor, write down a suitable chart type?
- (vi) The doctor charge (2500) is repeated in cells D5, D7, D10 and D11. Write down the formula that is more suitable to be entered in each of them instead of 2500.
- (vii) Choosing from the given list, write down the numbers of the formatting categories and options (if any) that have been applied to the following cell and cell range. and write down the number of the matching item for each question using only the **Question Number** → **Numbers** format.
- B2
 - E5:E12
- List:**{ 1- Font, 2 -Thousand separator, 3 -Date, 4 - Time, 5 -Decimal places, 6- Percentage }
- (viii) What could be the formula to display the total number of patients who visited on 12/31/2024 in cell C14?

03. The following are the partial relational database tables used to store data about students, book details, and lending information in a library.

Book table

BookNo	BookName	AuthorName	BookRackNo
B001	Brave New World	Aldous Huxley	11
B002	The Road	Cormac McCarthy	8
B003	Dracula	Bram Stoker	9
B004	Animal Farm	George Orwell	6

Borrowed table

BookNo	StudentNo	BorrowedDate	ReturnedDate
B002	S011	20/06/2025	23/06/2025
B004	S008	03/08/2025	08/08/2025
B001	S023	06/05/2025	09/05/2025
B004	S266	30/04/2025	06/05/2025

Student table

StudentNo	StudentName	Grade
S008	Kugan	8
S023	Sarmila	9
S266	Nirojan	8
S011	Dinansiya	10

- (i) State whether the following statements are **True** or **False**
- BookNo is foreign key of Book table
 - BookRackNo is the foreign key of Book table
- (ii) Which table(s) needed(s) to be updated to make the following changes?
- Sarmila borrowed the book Animal Farm on 28/05/2025.
 - Sathun from grade 11 gifted the book Lord Jim by Joseph Conrad to the library for his birthday.

- (iii) Write above the new record(s) to be added to the relevant table(s) for the change mentioned in part (2) (a), (b). Use the format: *TableName* \longrightarrow (*Field1*, *Field2*,...) to each record.
Note : Sathun has been assigned the student number S015
- (iv) Which tables need to be joined to write a query to find the book borrowed by Dinansiya has been returned
- (v) Who borrowed the book Brave New World, written by Aldous Huxley lastly?

04.

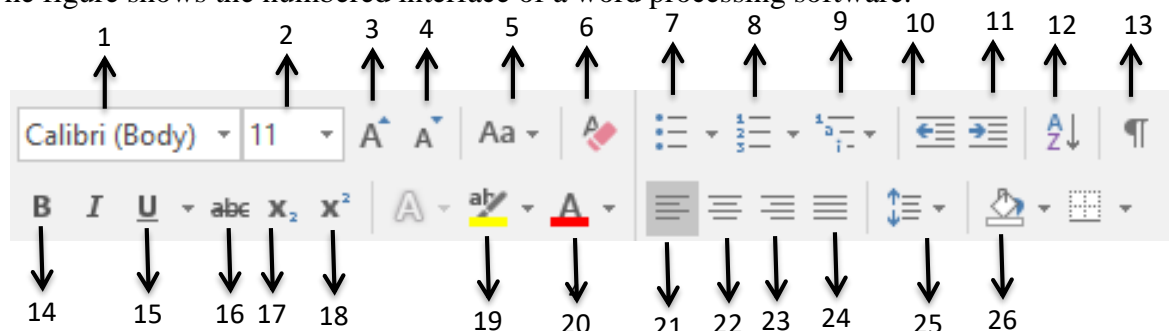
- (i) Naveen suspects his computer is infect with a virus. Based on this incident what kind of harmful activities can he observe on his computer?
- (ii) Naveen wants to protect his computer from virus infection. State two actions (pre cautions) he can take?
- (iii) Name the organization that provides (online) information security services for the people of Sri Lanka?
- (iv) Allarai Maha Vidyalaya maintains a manual information system to record and manipulate the performance level of their students at grade level. This is known as the score book in the school vocabulary. Especially school leavers, who do not sit for the national level examination, often come to obtain these old records. So it is essential to protect these documents and they are currently stored in some chest of drawers in the office room. But most of these old records are getting decayed and faded at the moment. It is also a problem that the staff has to put a higher effort to find this old information while completing their daily duties. School management has decided to establish an automated information system to get rid from this current situation.

Answers the following questions using the above scenario.

- (a) Write two methodologies of gathering data that can be used to identify the requirements of this system.
- (b) Principal's opinion is to firstly identify the requirements to develop the system and next to plan the appropriate solutions. Features of which system development model does this process indicate?
- (c) Used these automated systems for
 - i. Write two input devices.
 - ii. Write two output devices.
- (d) "However, would it be better to keep the marks in the score book too for a certain time period as we have done up to now?" Which system deployment model does this Deputy Principal's idea coincide with?
- (e) State an advantage of the system deployment model you have mentioned in above question (b).
- (f) Name a final testing method that can be used to test solutions by the developer in this system.

05.

- i. The figure shows the numbered interface of a word processing software.



By using the relevant numbers in the above interface write down now the tasks(b) to (g) could be done. The answer to (a) is given as an example

- a. Making a sentence bold.

Answer: Select the piece of text → click 14

- b. Changing H₂O to H₂O
 c. Centre Justifying a piece of Text.
 d. Changing the font colour of a piece of Text to red colour.
 e. Clear all formatting a piece of Text.
 f. Starting a Numbered list.
 g. Underlining a word.

ii. give two purposes can “Save as” feature in a word processing software be used?

iii. Indicate whether the following statements regarding a digital graphics A to D are True or False by drawing ✓ or ✗ symbols respectively against each label.


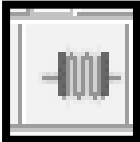

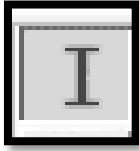
A – A digital graphic is an array of rectangular pixels called a bitmap.

B – When enlarge the raster image, the number of pixels increase.

C – TIFF is an example for lossy file format.

D – A raster graphic contains by collection of straight or curved lines.

iv. The following table shows some of the Audio recording tools of the Audacity software.

Icon of the recording tools				
Icon Number	①	②	③	④

Identify the suitable description for each of the icons ① - ④ from the description list labelled A – D given below.

Write down each icon number in the above table and its matching description label in the **icon number → description label** format.

Description List:

A: Replaces the selected audio with silence.

B: Select a start point for audio playback, or click and drag to select a range of audio to play or edit.

C: Starts recording audio.

D: Removes all audio outside the selection.

06. A four-sided regular tetrahedron with faces labeled as A,B,C,D . The values obtained when it is rolled 10 times are stored in the array X.

0	1	2	3	4	5	6	7	8	9
A	B	C	A	D	A	B	A	A	D

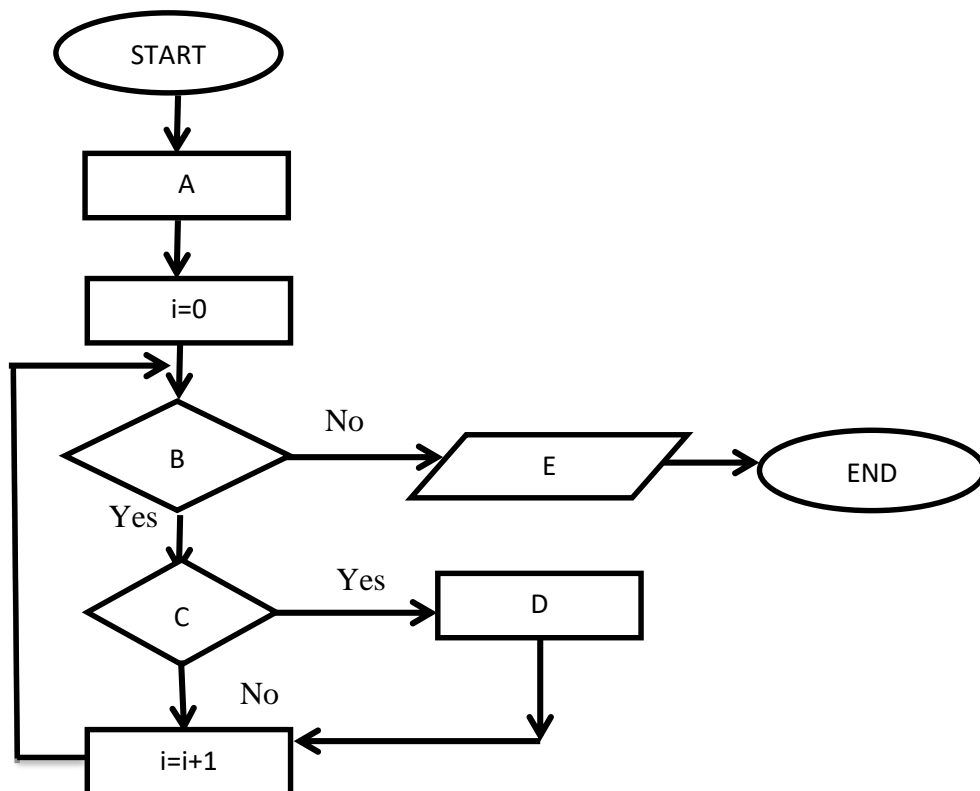
- (i) Define an array X in pascal programming
- (ii) To calculate how many times face A appears in this, give the values that should appear in the places marked P,Q,R,S?

```

Begin
count=0
i=0
while i<= ... P.....
if X [ ...Q..] = A then
    ...R... =count+1
end if
i=i+1
.....S.....
display count
end

```

- (iii). Given the above pseudo-code, give the corresponding values of A,B,C,D,E in the following flow chart.



07.

- (i) Match each description labelled **A** to **J** to a correct item from the numbered list and write down the number of the matching item for each label using only the **Label** → **Number** format.

Label	Description
A	The protocol used to identify a computer in a network.
B	Internet Service Provider
C	Software used for remote access.
D	This is a client-server model.
E	Used to identify a website.
F	The organization that manages domain names.
G	Used to identify a web page.
H	Software used to transfer large files.
I	Top Level Domain Name
J	Software used to create static websites.

List: {1-URL, 2- ICANN, 3- Kompozer, 4- Airtel, 5- Filezilla, 6- TeamViewer, 7- Srilanka.lk, 8- Internet, 9- IP, 10–Domain Name, 11- .lk, 12- joomla }

- (ii) Draw the output displayed by the HTML code section shown on the web page.

```
<dl>
  <dt><strong>JavaScript</strong></dt>
  <dt>HTML</dt>
  <dd>HyperText Markup Language</dd>
  <dt>CSS</dt>
  <dd>Cascading Style Sheets</dd>
</dl>
```

(iii) The HTML source of the web page given in Figure 1 is given in Figure 2 with certain missing tags labelled 1 to 16.

The Sports Meet

Welcome to our sportsmeet

The sportsmeet will be held on 13th October 2015 . Please participate the events and win prizes.

We offer following activity choices

1. Indoor Games

- Chess
- Scarables

2. Outdoor Games

- Netball
- Throw ball

Time Schedule

Game	Date 15.10.2015
Chess	09.30AM
Scrabble	11.30AM
Netball	02.00PM
Throw ball	04.00PM

For inquires [mail to us](#)

Figure1: Web page

```
<html>
<head><title>Sports Meet</title></head>
<body>
<h1>① The Sports Meet ②</h1>
<hr>
<p>
Welcome to our sportsmeet ..... ③
The sportsmeet will be held on 13th October 2015. Please participate the events and win
prizes. ③
We offer following activity choices
</p>
```



```

<p><ol>
    ④<u>Indoor Games</u>⑤
    <ul ⑥="square">
        ④ Chess ⑤        ④ Scarables ⑤
    </ul>
    ④ Outdoor Games ⑤
    <ul ⑥=" ⑦ ">
        ④ Netball ⑤        ④ Throw ball ⑤
    </ul>
</ol></p>
①<table ⑧="1">
    ⑨ Time Schedule ⑩
    ⑪⑬ Game      ⑭⑬ Date 15.10.2015 ⑭⑬
    ⑪⑬ Chess     ⑭⑬ 09.30AM          ⑭⑬
    ⑪⑬ Scrable   ⑭⑬ 11.30AM          ⑭⑬
    ⑪⑬ Netball    ⑭⑬ 02.00PM          ⑭⑬
    ⑪⑬ Throw ball ⑭⑬ 04.00PM          ⑭⑬
</table>②
<hr/>
① For inquires <⑮ href="link.html">mail to us ⑯②
</body>
</html>

```

Figure2: HTML Source

Select the correct tags for the labels **1** to **16** of **Figure 2** from the list given below and write down each label number and the corresponding HTML tag.

List: { , </tr>, border, </caption>, , circle, <center>, </td>, ,
, <td>, a, type, <caption>, <tr>, </cente> }