සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved]

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නව නිර්දේශය/புதிய பாடத்திட்டம்/New Syllabus

NEW

ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka

80 | E | I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2016 දෙසැම්බර්
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2016 டிசெம்பர்
General Certificate of Education (Ord. Level) Examination, December 2016

තොරතුරු හා සන්නිවේදන තාක්ෂණය I, II
தகவல் தொடர்பாடல் தொழினுட்பவியல் I, II
Information & Communication Technology I, II

පැය තුනයි
மூன்று மணித்தியாலம்
*Three hours*

## Information & Communication Technology I

**Note :**

(i) *Answer **all** questions.*

(ii) *In each of the questions **1** to **40**, pick one of the alternatives* (1), (2), (3), (4) *which you consider as **correct** or **most appropriate**.*

(iii) ***Mark a cross** (×) **on the number corresponding to your choice in the answer sheet provided.***

(iv) *Further instructions are given on the back of the answer sheet. Follow them carefully.*

**1.** What was the effect when vacuum tubes were replaced by transistors and later transistors were replaced by integrated circuits in the CPU?

(1) Both processing power and electricity consumption increased
(2) Processing power increased while electricity consumption decreased
(3) Processing power decreased while electricity consumption increased
(4) Both processing power and electricity consumption decreased

**2.** Consider the following devices:

A - Mouse
B - Touch screen
C - External DVD writable drive

Which of the above can be used as both input and output devices?

(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

**3.** Which of the following is a direct function carried out as part of memory management in an operating system?

(1) Releasing memory when a task is completed
(2) Accessing the hard disk
(3) Organizing files in a folder
(4) Managing devices

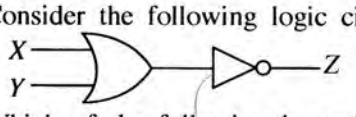
**4.** Which of the following is approximately equivalent to one Terabyte (TB)?

(1) $1x10^6$ MB (2) $1x10^6$ GB (3) $1x10^6$ KB (4) $1x10^9$ bytes

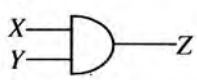
**5.** What is the decimal equivalent to octal 64?

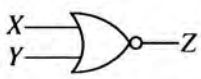
(1) 48 (2) 52 (3) 62 (4) 68

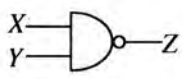
**6.** Consider the following logic circuit diagram:

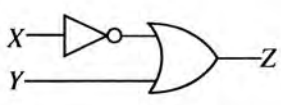



Which of the following is equivalent to the above logic circuit?

(1) 

(2) 

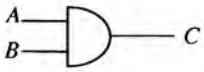
(3) 

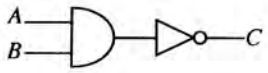
(4) 

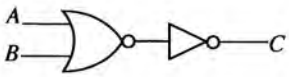

*[see page two*

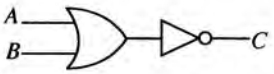
**7.** Which of the following logic circuits represents the given truth table?

| A | B | C |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

(1) 


(2) 


(3) 


(4) 


**8.** Which of the following is correct relating to the Internet and World Wide Web (WWW)?
(1) The Internet is a service of the WWW.
(2) The Internet and WWW are the same.
(3) The WWW is a service of the Internet.
(4) There is no relationship between the Internet and the WWW.

**9.** Consider the following statements related to a table created using Word Processing Software.
A – It is possible to format the text in a table.
B – Words in a column of a table can be arranged in alphabetical order.
C – Numbers in a column of a table can be added together.
Which of the above are correct?
(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

**10.** Which of the followings is **not** a common feature in both word processing and electronic presentation software?
(1) Find and replace
(2) Mail merge
(3) Changing line space
(4) Spelling checker

**11.** Which of the following is a feature **not** provided by a database management application?
(1) Sorting Data
(2) Updating Data
(3) Generating Reports
(4) Generating Charts

- Questions **12** to **14** are based on the following database tables.

Taxi Table

| **Taxi_No** | **Rate_Type** | **Driver_Name** | **Driver_City** |
|---|---|---|---|
| FX0675 | Car | Perera | Colombo |
| FY1256 | 3W | Raju | Colombo |
| FI6782 | Van | Dias | Matara |
| FZ1276 | 3W | Perera | Kandy |

Rate Table

| **Rate_Type** | **Rate** |
|---|---|
| Car | 44 |
| 3W | 38 |
| Van | 40 |

**12.** Which of the following is the most suitable field to be selected as the primary key for the Taxi Table?
(1) Taxi_No (2) Rate_Type (3) Driver_Name (4) Driver_City

**13.** Which of the following fields is an example for a foreign key in the database?
(1) Taxi_No in Taxi Table
(2) Rate_Type in Taxi Table
(3) Rate_Type in Rate Table
(4) Driver_City in Taxi Table

**14.** How many fields and records are available in the Rate Table, respectively?
(1) 2 and 2 (2) 2 and 3 (3) 3 and 2 (4) 3 and 3

*[see page three*

**15.** Nimal is writing a computer programme to create a graph to show the number of Dengue cases for the last five years. Input, process and output related to the programme are given in the steps A to D below but **not** in the correct order.

A – Show the graph for the total number of Dengue cases for the last five years
B – Number of Dengue cases for each year
C – Current year
D – Calculate the total number of Dengue cases for the last five years

Which of the following correctly shows the input, process and output?

(1) Inputs : A and B process : C output : D
(2) Inputs : B and C process : D output : A
(3) Input : B processes : C and D output : A
(4) Inputs : B and D process : A output : C

**16.** Testing phase of the systems development life cycle includes the following activities.

A – Acceptance Testing
B – Integration Testing
C – System Testing
D – Unit Testing

What is the correct testing order of the above activities?

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

**17.** There is a suggestion to introduce a new online system to replace the current manual system to apply for re-scrutiny of results of the G.C.E.(O.L.) Examination.

Consider the following statements related to this suggestion.

A – The proposed system will improve the efficiency of the re-scrutiny process.
B – The proposed system will improve the accuracy of the outcome of the re-scrutiny process.
C – The proposed system will have a negative impact on the candidates who do not have access to the Internet.

Which of the above statements are valid?

(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

**18.** Which of the followings shows the file format of image files only?

(1) DOCX, MP3, PNG (2) PNG, RAW, MP3
(3) RAW, JPEG, BMP (4) PPTX, BMP, PNG

**19.** Consider the following HTML code segment:

```
<html>
<body>
<dl>
    <dt>Government Schools in Sri Lanka </dt>
    <dd>National Schools - 350 </dd>
    <dd>Provincial Schools - 9662 </dd>
</dl>
</body>
</html>
```

The output of the above HTML code would be:

(1) Government Schools in Sri Lanka
National Schools - 350
Provincial Schools - 9662

(2) Government Schools in Sri Lanka
i. National Schools - 350
ii. Provincial Schools - 9662

(3) Government Schools in Sri Lanka
- National Schools - 350
- Provincial Schools - 9662

(4) Government Schools in Sri Lanka
1. National Schools - 350
2. Provincial Schools - 9662

**20.** Consider the following software

A – Simple text editor
B – Word-processing software
C – Web authoring software

Which of the above software/softwares can be used to create an HTML document?

(1) C only (2) A and C only (3) B and C only (4) All A, B and C

*[see page four*

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**21.** According to a survey conducted by the Department of Census and Statistics in 2015, the computer literacy rate of Sri Lanka is 26.8%. It is assumed that the digital divide is one reason for the low computer literacy rate.

Consider the following suggestions:

A – Arrange loan facilities at low interest rates for the households of low income category to buy computers.

B – Improve computing and internet facilities in rural areas where such facilities are inadequate.

C – Provide more scholarships for the children who succeed in the Grade 5 scholarship examination.

The relevant suggestion/suggestions which will contribute to reduce the digital divide is/are,

(1) A only. (2) B only. (3) A and B only. (4) B and C only.

**22.** Which of the following is **not** essential to host a web site?

(1) Web browser (2) Web server (3) IP address (4) Website content

**23.** What is the domain name of the URL, http://www.bbc.com/sport/cricket?

(1) bbc.com/sport (2) bbc.com/sport/cricket

(3) http://www.bbc.com (4) bbc.com

**24.** While typing an email to one of his friends, Rajan accidentally closed the email application. In which folder of his email account will he find the unfinished email?

(1) Draft (2) Inbox (3) Sent (4) Trash

● Questions **25** and **26** are based on the given spreadsheet segment.

| | A | B | C |
|---|---|---|---|
| 1 | 1 | 2 | 3 |
| 2 | 4 | 5 | 6 |
| 3 | 5 | | |

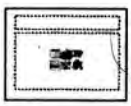
**25.** Which of the following will appear in cell C3 if the formula =count(A1:B3) is entered to cell C3?

(1) 1 (2) 3 (3) 5 (4) 6

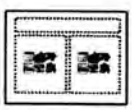
**26.** The cell A3 contains the formula =sum($A1:A2). Which of the following will appear in cell B3 if the formula is copied to cell B3?

(1) 5 (2) 7 (3) 11 (4) 12

**27.** What tool in electronic presentation software can be used to change the style of a slide from Style 1 to Style 2?



Style 1



Style 2

(1) Slide design
(2) Slide sorter
(3) Slide layout
(4) Slide view

**28.** What tool in electronic presentation software is used to manage how text and images appear when making a presentation using Slides show?

(1) Slide design (2) Slide transition (3) Slide layout (4) Animation

**29.** Which of the following show data transfer speeds of secondary storage devices arranged in an ascending order?

(1) Solid state hard drive, Magnetic hard drive, floppy disk drive, DVD drive
(2) floppy disk drive, Magnetic hard drive, DVD drive, Solid state hard drive
(3) floppy disk drive, DVD drive, Magnetic hard drive, Solid state hard drive
(4) Solid state hard drive, Magnetic hard drive, DVD drive, floppy disk drive

**30.** Consider the following statements:

A - Optical Fiber cables provide faster data transfer rates than that of copper cables.

B - Copper cables provide faster data transfer rates than that of Optical Fiber cables.

C - Copper cables are more expensive than Optical Fiber cables.

Which of the above is/are correct?

(1) A only (2) B only (3) A and C only (4) B and C only

*[see page five*

**31.** Consider the following statements:

A – A student obtains medical advice from a doctor by contacting him over the telephone.

B – An automated system, based on the humidity and temperature releases water to plants in a greenhouse.

C – A teacher purchases a book which is not available in Sri Lanka, from an online book shop.

Which of the above use the Information and Communication Technology (ICT) effectively?

(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

**32.** Consider the following statements:

A - It is suitable to dispose electronic waste (e-waste) such as unusable mobile phones and CRT monitors with household garbage such as food leftovers.

B - It is not illegal for multiple users to use a software in a desktop computer which has a single user licence.

C - When a firewall is installed in a computer network, users do not require to use passwords to protect their files with confidential data.

Which of the above statements are correct?

(1) A only (2) B only (3) A and B only (4) B and C only

**33.** In the ASCII code, Character 'Q' is represented as $1010001_2$. What is the option that represents the word 'PUT' in binary form?

(1) $1010000_2$ $1010101_2$ $1010100_2$ (2) $1010001_2$ $1010101_2$ $1010100_2$

(3) $1010000_2$ $1010011_2$ $1010111_2$ (4) $1010101_2$ $1010100_2$ $1010011_2$

**34.** Consider the following four numbers presented in different number systems:

$11110011_2$, $F3_{16}$, $363_8$, $243_{10}$

Which of the following statements is true regarding the above four numbers?

(1) $F3_{16}$ is larger than other three numbers. (2) $363_8$ is smaller than other three numbers.

(3) Four numbers are equal to each other. (4) Four numbers are not equal to each other.

**35.** Consider the following statements relating to digital images:

A – Digital images are created with pixels.

B - Image file size increases when resolution of an image increases.

C - Resolution of an image can be measured with pixels per inch (ppi).

Which of the above statements are correct?

(1) A and B only (2) A and C only (3) B and C only (4) All A, B and C

**36.** Consider the following pascal programme:

```
program repetition (input, output);
var X : integer;
begin
  X := 1;
  repeat
    write (X);
    X := X + 1;
  until X = 3;
end.
```

What is the correct output when the above programme is executed?

(1) 1
2

(2) 1 2

(3) 1
2
3

(4) 1 2 3

**37.** Consider the following pseudocode with label Ⓧ to calculate the sum of numbers from 1 to 100.

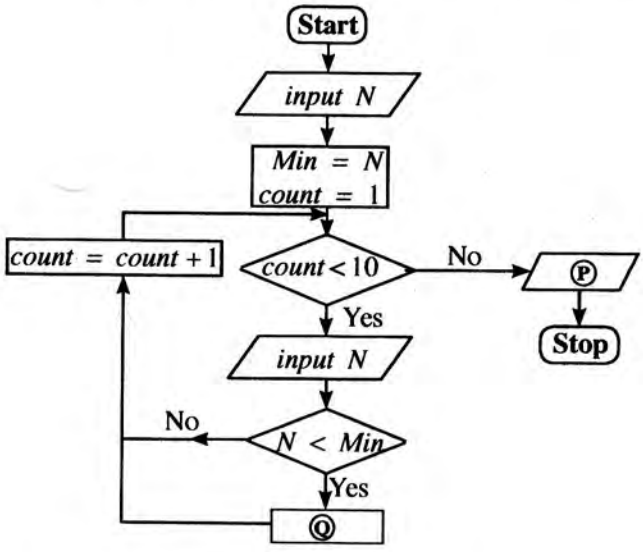
```
sum = 0
num = 0
repeat
  num = num + 1
  sum = sum + num
until Ⓧ
```

For the above mentioned pseudocode, what is the correct condition that matches with the label Ⓧ ?

(1) *num* < 100 (2) *num* <= 100 (3) *num* > 100 (4) *num* >= 100

*[see page six*

- Questions **38** to **39** are based on the following flowchart designed to find the smallest number from any ten numbers.




**38.** Which of the following correctly represents the labels Ⓟ and Ⓠ in the flow chart respectively?

(1) output Min, Min = N
(2) output N, count = count – 1
(3) output count, Min = N
(4) output Min, count = count – 1

**39.** Which of the following statements is correct related to the control structures given in the flowchart?

(1) SELECTION occurs within REPETITION
(2) REPETITION occurs within SELECTION
(3) REPETITION occurs within REPETITION
(4) SELECTION occurs within SELECTION

**40.** Consider the following pseudocode segment:

```
count = 0
repeat
  display ("HELLO")
  count = count + 1
until count > 4
while count > 4
  display ("HELLO")
  count = count – 1
end while
```

How many times will the word HELLO be displayed when the above pseudocode is executed?

(1) 4 (2) 5 (3) 6 (4) 7

* *

Kosala Rajapakse www.itpanthiya.com

[see page seven

සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved]

නව නිර්දේශය/புதிய பாடத்திட்டம்/New Syllabus

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NEW ශ්‍රී ලංකා විභාග දෙපාර්තමේන්තුව
இலங்கைப் பரீட்சைத் திணைக்களம்
Department of Examinations, Sri Lanka

80 | E | I, II

අධ්‍යයන පොදු සහතික පත්‍ර (සාමාන්‍ය පෙළ) විභාගය, 2016 දෙසැම්බර්
கல்விப் பொதுத் தராதரப் பத்திர (சாதாரண தர)ப் பரீட்சை, 2016 டிசெம்பர்
General Certificate of Education (Ord. Level) Examination, December 2016

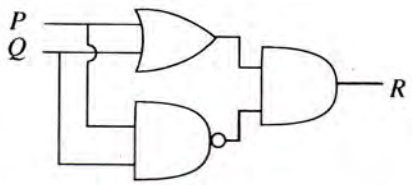
තොරතුරු හා සන්නිවේදන තාක්ෂණය I, II
தகவல் தொடர்பாடல் தொழினுட்பவியல் I, II
Information & Communication Technology I, II

## Information & Communication Technology II

* *Answer **five** questions only, selecting the **first question** and **four** others.*
* *First question carries **20** marks and each of the other questions carries **10** marks.*

**1.** (i) Convert the Hexadecimal number E9 to the equivalent octal number. Show the relevant steps.

(ii) Consider the following logic circuit diagram:




Present the equivalent Boolean expression for the above logic circuit.

(iii) A company uses its own file server to store electronic documents, spreadsheets and images. In order to reduce the cost it decides to store these files in a cloud based (online) drive.

(a) Write down **one** benefit of using a cloud based (online) drive in addition to reducing the cost.
(b) Write down **one** disadvantage of using the cloud based (online) drive.

(iv) Geetha uses an Automated Teller Machine (ATM) to withdraw money from her bank account. First she inserts the ATM card into the machine and enters the secret pin code. Then she enters the amount of money she wants to withdraw. The system checks the balance available in her account and dispenses money as the balance available in her account is more than the amount of money Geetha wants to withdraw. At the same time the system updates the balance available by deducting the amount of money dispensed from the previous balance.
From the above scenario, write down an example each for input, processing and output.

(v) The first column in the following table shows activities related to different devices indicated by letters Ⓐ to Ⓓ. The second column shows the Ports required to connect these devices to a computer. However, activities and ports are not in the correct order.

| Activity | Port |
|---|---|
| Ⓐ - Selecting a menu option using an optical mouse | RJ 45 |
| Ⓑ - Listening to a song using a headphone | HDMI |
| Ⓒ - Accessing the Internet through a Local Area Network (LAN) | Audio port |
| Ⓓ - Show a video clip with a multimedia projector | USB |

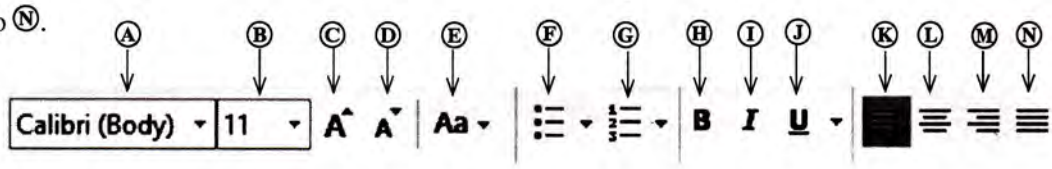
Identify the correct port from the second column to connect each of the devices indicated in the first column.
Write down the letter for the activity and the relevant port in your answer book.

*[see page eight*

(vi) A document was created with a word processing software and it was formatted as indicated by numbers ① to ④ below.

| Before formatting | After formatting |
|---|---|
| Green IT | Green IT ← ① ② |
| Green IT is the study and practice of environmentally sustainable computing or IT. | **Green IT** is the study and practice of environmentally sustainable computing or IT. |
| Some of the green IT approaches include: | Some of the green IT approaches include: |
| Product longevity | • Product longevity ← ③ |
| Materials recycling | • Materials recycling |
| Source: https://en.wikipedia.org/wiki/Green_computing | *Source: https://en.wikipedia.org/wiki/Green_computing* ← ④ |

Some formatting tools available in a Word Processing software are shown below with labels Ⓐ to Ⓝ.




Identify the tool(s) used for the formatting tasks indicated by the numbers ① to ④. Write down the number assigned to the formatting task and the relevant label(s) of the tool(s).
(**Note:** No marks will be given if more formatting tools than necessary are given in your answer.)

(vii) Consider the following table with four statements relating to the Internet indicated by letters Ⓟ to Ⓢ given in the first column.

| | |
|---|---|
| Ⓟ - Large collection of electronic documents | HTTP |
| Ⓠ - Transfer large files from one computer to another over the Internet | DNS |
| Ⓡ - Translates a URL to an IP address | FTP |
| Ⓢ - A protocol to access web pages | WWW |

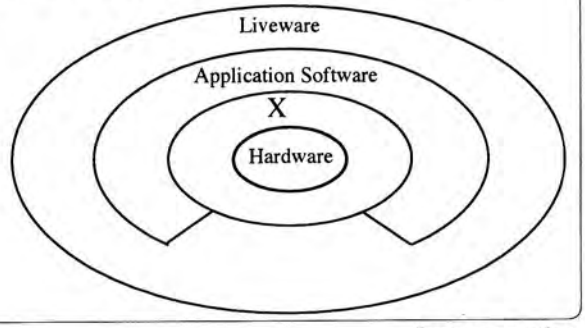
Match the statements given in the first column to the correct term from the second column.
Write down the letter for the statement and the correct term in your answer book.

(viii) Consider the following table with tasks related to editing an image indicated by letters Ⓦ to Ⓩ given in the first column. Tools available in a typical image editing software indicated by numbers ① to ④ are given in the second column. However, formatting tasks and tools are not in the correct order.

| | |
|---|---|
| Ⓦ - Selecting a part of the image based on its colour | ① -  |
| Ⓧ - Moving a selected part of the image | ② -  |
| Ⓨ - Erase part of the image | ③ -  |
| Ⓩ - Change the colour of a selected part of the image | ④ -  |

Match the tasks given in the first column to the correct tool in the second column.
Write down the letter of the task and the number of the correct tool in your answer book.

(ix) Consider the given diagram.
(a) Give an example each for Hardware, Application Software and Liveware.
(b) Identify and write down **one** component represented by X.




*[see page nine*

(x) Consider the following program segment in Pascal.

```
var num:array[0..4] of integer;
    begin
        num[0]:=15;
        num[2]:=18;
        num[4]:=50;
        num[1]:=num[4]+10;
        num[3]:=num[0]+num[2];
        for i:=1 to 4 do
            writteln(num[i]);
    end.
```

Write the output of the above program.

**2.** (i) Description of different malware (malicious software) labelled with letters Ⓐ to Ⓓ and, a list of different malware are given in the first and second columns of the following label respectively. However, description and malware are not in the correct order.

| | Description | Malware |
|---|---|---|
| Ⓐ | Presents itself as harmless and enters without the knowledge of users and then could steal and/or delete data | Spam |
| Ⓑ | Collects information about bank accounts or electronic accounts using emails and steals cash deposits by deceiving the user. | Spyware (Trojan horse) |
| Ⓒ | Unauthorized email either relate to advertisements about a product or from an unknown person. Collects email addresses and they are used unlawfully. | Computer Worm |
| Ⓓ | Are capable of acting and spreading alone using email attachments, false websites and instant messages. | Phishing |

Match the correct malware from the second column to the description given in the first column. Write down the letter of the description and correct malware in your answer book.

(ii) (a) Write down **two** methods for the proper disposal of electronic waste (e-waste).

(b) Write down any **three** recommended correct postures a user should adopt in order to minimize the adverse effects such as Computer Vision Syndrome (CVS), Carpel Tunnel Syndrome (CTS) and Repetitive Stress Injury (RSI) related to the ICT.

(c) Consider the following scenario:

"An Information Technology Manager (IT Manager) of a company is also an active member of a voluntary organization which supports families of low income for education, health care etc. Without the knowledge of the authorities of the company he provides a list of email addresses of leading businessmen who are customers of his company to the voluntary organization in order to contact them for fund raising." Briefly explain why the act of the IT Manager is unethical.

(d) The computer hardware in an office are completely destroyed by a fire and as a result some important data in the storage devices have been lost forever.
Briefly explain the precautionary steps that could have been taken to avoid this loss of data.

**3.** (i) Each of the following statements has a blank space. Identify the most suitable term(s) to fill in the blank space from the three options given within brackets at the end of the statement.
Write down the question number and the relevant term(s) in your answer book.

(a) In addition to an Internet connection a ..... is an essential component to publish a website. {content management software, web host, web user group}

(b) A ..... is used in creating a dynamic website. {content management software, file transfer protocol, web user group}

(c) Text, images and sound are components of ..... . {web content, web host, domain name}

(d) Regular updating of a website is an important part of ..... . {content management software, maintenance, protocols}

*[see page ten*

(ii) Consider the sample web page given in **Figure 1** which is to be prepared using the source code shown in **Figure 2**.

## Human Elephant Conflict in Sri Lanka



Elephants in their natural environment

Elephant population in Sri Lanka is dwindling at an alarming rate due to the conflict between the humans and the elephants. Number of deaths of humans and elephants during the last three years are given in the following table. It has been revealed that, humans are responsible for most of the deaths of elephants.

Records of Deaths

| Year | Humans | Elephants |
|---|---|---|
| 2013 | 71 | 207 |
| 2014 | 67 | 232 |
| 2015* | 33 | 112 |

* - During the first five months

More information about the conflict between the humans and the elephants can be found in *The Conflict*

**Figure 1** (source : The Internet)

```
<html>
<head><①>Human Elephant Conflict</①></head>
<body><②>
<③><④ face = "arial" color ="black">Human Elephant Conflict in Sri Lanka </④></③></②>
<center><img ⑤="Elephants-02.jpg" width="300" height="200"></center>
<center><④ face ="arial" size = "2">Elephants in their natural environment</④></center>
<⑥ align = "⑦"> Elephant population in Sri Lanka is dwindling at an alarming rate due to the conflict between the humans and the elephants. Number of deaths of humans and elephants during the last three years are given in the following table. It has been revealed that, humans are responsible for most of the deaths of elephants. </⑥>
<center>
<table border="1">
<caption >Records of Deaths </caption>
<tr><th>Year</th><th>Humans</th><th>Elephants</th></tr>
<center>
<tr><td>2013</td><td align="center">71</td><td align="center">207</td></tr>
<tr><td>2014</td><td align="center">67</td><td  align="center">232</td></tr>
<tr><td>2015*</td><td align="center">33</td><td align="center">112</td></tr>
</center>
</table>
<center><④ size = "1"> * - During the first five months</④></center>
<⑥ align = "⑦"> More information about the conflict between the humans and the elephants can be found in <a ⑧="https://elephantconservation.org/"> <i>The Conflict</i></a></⑥>
</body>
</html>
```

**Figure 2**

The code in **Figure 2** has eight missing HTML tags or terms indicated by labels ① to ⑧. Select the correct tags/terms for the labels from the list : src, justify, title, caption, h2, href, p, font
Write down the label number and the corresponding HTML tag/term.

*[see page eleven*

**4.** The given spreadsheet segment shows the distribution of monthly tea prices for the year 2015.
(source: www.indexmundi.com)

| | A | B | C |
|---|---|---|---|
| 1 | Average Monthly Price of 1 Kg of Tea | | |
| 2 | Month | Price(Rs) | Price Difference |
| 3 | 2014 December | 318.79 | |
| 4 | 2015 January | 354.79 | |
| 5 | 2015 February | 393.33 | |
| | ⋮ | ⋮ | ⋮ |
| 14 | 2015 November | 502.04 | |
| 15 | 2015 December | 492.71 | |
| 16 | 2015 Average Price | | |

Use the above spreadsheet segment to answer the following questions.

(i) A formula of the form =function1(cell1:cell2) is written in cell B16 to calculate and display the average price of tea for the year 2015. Write down the relevant terms for function1, cell1 and cell2.

(ii) Price difference of average monthly price for the month of December is calculated as follows.

$\text{Price Difference}_{\text{December}} = \text{Price}_{\text{December}} - \text{Price}_{\text{November}}$

A formula of the form =function2(cell3:cell4) is written in cell C15 to display the price difference for December, 2015.

Write down the relevant terms for function2, cell3 and cell4.

(iii) What would be the formula displayed in cell C4 if the formula in C15 is copied to cell C4?

(iv) Name **two** appropriate chart types available in spreadsheet software to show the variation in the average monthly price of tea for the year 2015.

(v) What cell range would you use for the horizontal axis to draw the charts in your answer to (iv) above?

**5.** A school band has a collection of instruments and they are lent to students who do not have instruments but want to be part of the school band. The school band maintains a database to manage the lending of instruments to the students. The database contains tables as given below.

**Instrument Table**

| I_ID | Instrument | Received_on |
|---|---|---|
| I001 | Trumpet | 01/01/2015 |
| I002 | Clarinet | 01/01/2015 |
| I003 | Trumpet | 01/06/2015 |

**Student Table**

| S_ID | Name | Grade |
|---|---|---|
| S004 | Nuwan | 8 |
| S005 | Kumara | 9 |

**Borrowing Table**

| Date | I_ID | S_ID |
|---|---|---|
| 01/01/2016 | I003 | S004 |
| 01/03/2016 | I002 | S005 |
| 01/03/2016 | 1003 | S004 |

(i) List **two** primary key fields and their respective table names in the above database.

(ii) The school band received a donation of two new Drums on 2nd of December 2016.
  (a) What table(s) need(s) to be updated in the database?
  (b) Write down the updated row(s) of the table(s) in the database.

(iii) Saman joins the band on the 8th of December 2016 and borrows a Trumpet on the same day.
  (a) What table(s) need(s) to be updated in the database?
  (b) Write down the updated row(s) of the table(s) in the database.

**6.** (i) Assume that the principal of your school requests you to develop a computer based system for generating report cards to replace the current manual system. As the accuracy of the report card is a very important factor, your IT Teacher advises you to determine a suitable deployment approach.
  (a) State **one** method that can be used to gather the requirements of the system.
  (b) You have decided to use the waterfall model to develop the new new system.
    (1) Point out **one** limitation of the waterfall model.
    (2) Write down an alternative deployment approach to the waterfall model.
  (c) (1) What would be the most appropriate deployment method for this system?
    (2) State **one** reason for the recommendation you made in (c) (1) above.

*[see page twelve*

(ii) A company with the head office in Colombo and three branches in Kandy, Matara and Jaffna decides to conduct monthly branch managers' meetings using the video conferencing technology.

(a) Write down **one** advantage of using the video conferencing technology for the campany.

(b) Write down **one** problem the company may face when using the video conferencing technology.

(c) Currently the above company uses printed letters and memos to communicate with its employees. It decides to use modern technology to replace the current method of communicating with employees. Racommend a suitable messaging technology for this propose.

(d) In addition to the video conferencing and your recommendation in above (c) state **two** other methods the company can use to communicate with its employees using modern technology.

7. (i) The pseudocode given below reads two numbers and displays the larger number.

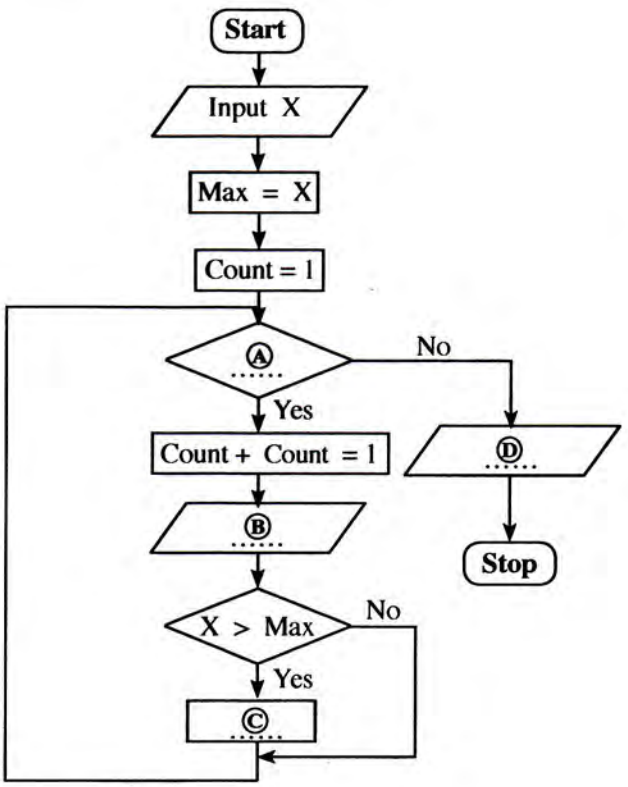
```
start
  get A, B
  if A>B then
    display A
  else
    display B
  endif
stop
```

Draw a flow chart to represent the above pseduocode.

(ii) Suppose a school has conducted an examination of a particular subject for 100 students and recorded the marks scored. The given flowchart with blank spaces indicated by labels Ⓐ to Ⓓ is designed to read these marks and display the highest.

Identify and write down the appropriate statements for labels Ⓐ, Ⓑ, Ⓒ and Ⓓ.

(You are **not** required to copy the flowchart to your answer book)




* * *