බස්නාහිර පළාත අධ්‍යාපන දෙපාර්තමේන්තුව மேல் மாகாணக் கல்வித் திணைக்களம் Department of Education - Western Province		
වර්ෂ අවසාන ඇගයීම ஆண்டிறுதி மதிப்பீடு - 2016 Year End Evaluation		
ශ්‍රේණිය தரம் } 11 Grade	විෂය பாடம் } Information and Communication Subject } Technology I , II	පතුර வினாத்தாள் } I Paper	කාලය நேரம் } 03 Hours Time

Important :

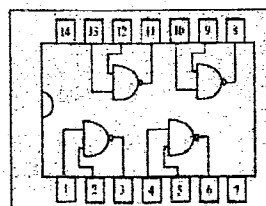- Answer **all** questions.
- In each of question 1 to 40, pick one of the alternative 1), 2), 3) ,4) which is **correct** or most appriate and mark your response.

1. An ATM machine in a Bank system process data and retrieve information of an account.
   A. Inputs are name and secret number.
   B. Displaying of the dialog box to select reason is the Processing.
   C. Displaying name, deposit number and balance is referred to as information receiving.
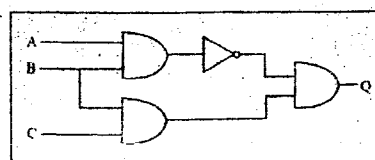   Which of the above statement/s is/are true?
   1) A only.   2) A and B only.   3) A and C only.   4) All A, B , C

2. Which of the following statement is true about switch and the hub?
   A. Data transfer speed of switch is higher that the hub.
   B. Hub sends transmitted data to all computers.
   C. Switch sends data only to relevant computer.
   D. Switch is full-duplex while hub is simplex.
   1) A ,B , D only.   2) B, C, D only.   3) A,B,C only.   4)All A,C,D

3. Which of the followings is **not** a suitable step to protect your computer from malicious software from Internet?
   1) Prevent from clicking on suspicious advertisements and messages.
   2) Checking with an anti-virus software before downloading the document or the software,
   3) Entering of confidential and private data to a web without a security check of the web.
   4) Landing on web sites that the URL cannot be verified for safety.

4. Consider the given integrated circuit.
   1) When point 1 = 0 and point 2 = 1the point 3 = 1.
   2) When point 4 = 1 and point 5 = 1the point 6 = 1.
   3) When point 9 = 0 and point 10 = 1 the point 8 =0.
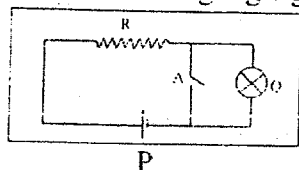   4) When point 12 = 1 and point 13 = 0 the point 11 = 0.

5. Which of the following Boolean expression equals to the logic circuit?

   1) $A + C . \overline{A.B}$

   2) $\overline{A.B} . B.C$

   3) $B+C .\overline{A + B}$

   4) $\overline{A + B} + (A . C)$

491

6. Which of the following logic gate is equals to the electric diagram?

P – battery.   Q -bulb.   A -switch.

1) AND gate.
2) OR gate.
3) NOT gate.
4) NOR gate.

7. Which of the following represents the number of Bits in 3MB?

   1) $1024^2 \times 8 \times 3$
   2) $1024^3 \times 8$
   3) $1024^2 \times 8$
   4) $1024 \times 8 \times 3$

8. Which of the following equals to BCD value of 56_{10}?

   1) 01000110_{BCD}
   2) 01010110_{BCD}
   3) 10001010_{BCD}
   4) 1010111_{BCD}

9. Which of the following represents the MSD and LSD of 0.076050 respectively?

   1) 0 and 0.
   2) 5 and 7.
   3) 7 and 5.
   4) 7 and 0.

10. Which of the following represents the ascending order of 11101011_2, 564_8, 614 and 489_{16}?

   1) 11101011_2, 614, 489_{16}, 564_8
   2) 489_{16}, 614, 564_8, 11101011_2
   3) 564_8, 614, 11101011_2, 489_{16}
   4) 11101011_2, 564_8, 614, 489_{16}

11. If 1000011 represents ASCII "C", Which of the following represent "G"?

   1) 1001000
   2) 1000111
   3) 1000101
   4) 1000110

12. In a certain activity, A and the B students function as the opening pair, while one out of C and D students are allowed to function as the 3rd member.
Which of the following matches the above scenario?

   1) A AND B OR (C OR D)
   2) A OR B AND (C OR D)
   3) A AND B AND (C OR D)
   4) A AND B AND (C AND D)

13. Consider the following facility available in a word processing package.
   A. Landscape   B. Layout   C. Portrait
Which of the above are of orientation type(s) in a word processing package?

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

14. Following statements contains the shortcut key combination and its function in a word processing software
   A. Ctrl + C is used to align both ends of the document
   B. Ctrl + Home is used to bring the cursor to beginning of the document.
   C. Ctrl + H is used to replace words.
   Which of the above statement/s is/are correct?

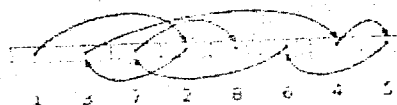   1) A only.   2) B only.   3) A and B only.   4) B and C only.

15. Consider the following statements about a presentation,
   A. Pre-paired transparency papers are used in a Over-head Projector
   B. Slides of a slide projector are prepared after developing them in a studio and pasting them on slides.
   C. Pictures, videos, animations, Images, letters, digits and sounds are used in multimedia using multimedia projectors.
   Which of the above statement/s is are true?

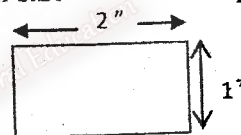   1) A only.   2) B and C only.   3) A and B only.   4) all of the above.

492

16. Following diagrams A and B two ways that files are accessed. Which of the following terms are referred to them respectively?

1) Sequential / A Random Access
3) Direct Access, Sequential Access

2) Random Ac B Sequential Access
4) Random Access, Direct Access

17. When a printer is connected to a computer, the operating system automatically installs its.....❶........ , the computer uses ....❷...... to manipulate the connected Peripheral Devices by the operating system, which of the following contains the suitable words to fill in the blanks in order.?

    1) Application Software , Utility Software
    2) Device Controller ,Device Driver
    3) Device Driver, Device Controller
    4) Utility Software, Device Controller

18. Select the malicious software that cheats the users and steal their information of bank accounts using e-mails.

    1) Bots   2) Phishing   3) Hijacker   4) Spyware

19. Which of the following is **not** a benefit for a student out of online school library system?
    1) Ability to get membership online.
    2) Ability to read e-books for members.
    3) Ability to browse and make reservations on books online.
    4) Ability to lend and receive books using a bar code system.

20. Which of the following is the number of pixels in the given size image of 36ppi

    1)   36 pixels   2) 72 pixels
    3) 2592 pixels   4) 5184 pixels

21. Which of the following term refers to the still frame of an animation that begins or mark the change point of an animation?

    1) Frame   2) Key frame
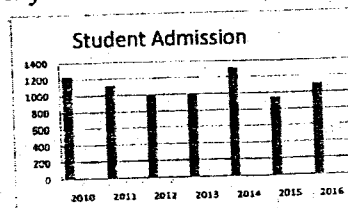   3) Blank Key frame   4) Tween frame

Question 22 and 23 are based on the above spread sheet segment.

22. Which of the following is the answer if =$A3+B2 in cell C4 is copies to C5?
    1) 9   2) 8   3) 17   4)16

23. Which of the following is the answer if =A3+B2in cell C4 is copies to C5?
    1) 9   2)8   3) 17   4)16

24. Consider the following part of spread sheet and the graph ,displaying number of students admitted to Mihindu College in each year.

Year	students admitted
2010	1230
2011	1120
2012	989
2013	1002
2014	1320
2015	950
2016	1100

Which of the followings are the relevant cell ranges for each of X and Y axis in the chart?
    1) X=A1:A8 and Y=B2:B8   2)   X=A2:A8 and Y=B1:B8
    3) X=A1:A8 and Y=B1:B8   4)   X=A2:A8 and Y=B2:B8

25. Consider the following statements on database.
    A. Data Redundancy-is the repetition of same data in many tables.
    B. Relational Database - linking of large amount of data.
    C. Data Encryption - change of data into a format that an unauthorized person cannot read.

    Which of the above statement/s is /are true?
    1) A only.   2) A and B only   3) A and C only.   4) all A, B, C.

A database connected to an e-channeling system, maintains a doctor table to doctor's information, a patient table to store information of registered patients and a channel table to store channel information. Answer the question 26 and 27 based on channel table given below.

Channel Table

Patient_ID	Doc_ID	Channel_ Date
P100	D002	2016/09/07
P101	D001	2016/09/08
P102	D002	2016/09/07
P103	D003	2016/09/10

26. Which of the followings is an example of a Foreign Key of the database?
    1) Patient Table of Patient_ID   2) Doctor Table of Doc_ID
    3) Channel Table of Patient_ID   4) Channel Table of Channel_Date

27. The link between patient table and the Doctor table is referred as -------------relationship
    1) One-to-one   2) One-to-Many   3) Many-to-many   4) Many-to-one

28. Which of the following tag can be used in place of the tag <b>, to bold type some text on a HTML web page?
    1) <strong>   2)<dar>   3)<black>   4)<emp>

29. Which of the following is used to create a hyperlink to an e-mail address?
    1) <a href="xxx@yyy"> e-mail   2) <mail href="xxx@yyy"> e-mail</ mail >
    3) <mail>xxx@yyy</mail>   4) e-mail

30. Which of the following is used to set a background color to a web page?
    1) <body color="yellow">   2)<body bgcolor ="yellow">
    3)<background>yellow</background>   4)<body background="yellow">

31. Usually HTML tags are used in pairs. Which of the following tag is **not** used in pairs?
    1) <p>   2) < u >   3)<img>   4)<i>

32. Which of the following is not a valid html code?
    1) xxxx
    2) xxxx
    3)xxxx   4) xxxx

33. Consider the following statements on computer languages.
    A. Machine language codes depend on machine.
    B. Mnemonics were used in Assembly Language.
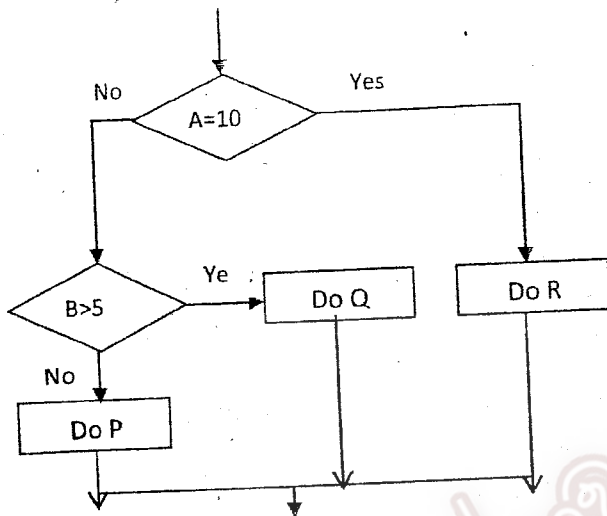   C. Pascal is a high level language.
    Which of the above statement/s is/are true?
    1) A only.   2) A and C only.   3) B and C only.   4) all of above.

୫୨୫

34. Which of the following statements is **not** true?
   1) Sequential processing, object oriented processing and parallel processing are of declarative processing paradigm.
   2) A name referred to a variable, a constant or to an algorithm is called an identifier.
   3) Selection is used in a programming situation to decide which step to take upon a condition to be fulfilled.
   4) A program converted to machine code can be run any number of times and re-conversion is necessary only if the source code is changed in a compiler based programming.

35. Which of the following pseudo-code matches the flow chart?


```
1
If A= 10 then
    Do R
Else
    If B > 5 then
        Do Q
    Else
        Do P
    End if
End if
```

```
2
If A=10 then
    Do R
Else
    Do P
End if
If B > 5 then
    Do Q
Else
    Do P
End if
```

```
3
If A=10 then
    If B > 5 then
        Do P
    Else
        Do Q
    End if
    Do R
End if
```

```
4
If A=10 then
    Do R
Else
    If B > 5 then
        Do P
    Else
        Do Q
    End if
Else
    Do P
End if
```

36. Which of the following is the output of following Pascal code?

```
program test;
 var x:integer ;
begin
   x:=2;
   while x<=20 do
   begin
   writeln(x);
   x:=x+2;
   end;
   readln();
end.
```

   1) Numbers below 20
   2) 2 , 20
   3) even numbers up to20
   4) even numbers below 20

37. Which of the following is the output of above pseudo code?

```
Count = 1
Repeat
    Count = Count + 2
Until Count > 10
Display Count
```
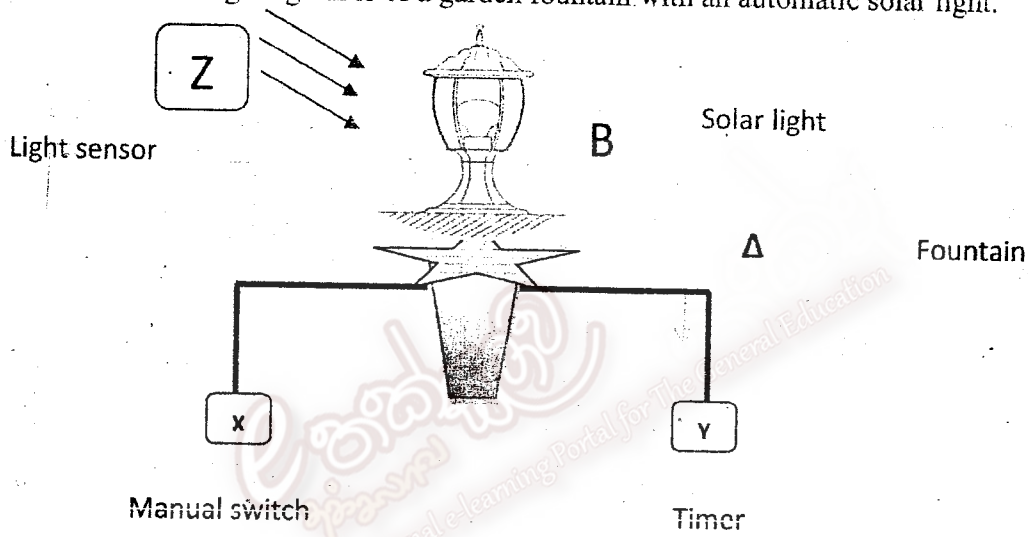
   1) 3   2) 5   3) 9   4) 11

495

	බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව மேல் மாகாணக் கல்வித் திணைக்களம் Department of Education Western Province	
	වර්ෂ අවසාන ඇගයීම ஆண்டிறுதி மதிப்பீடு — 2016 Year End Evaluation	
පුතිය தரம் Grade } 11	විෂය பாடம் Subject } Information and Communication Technology I , II	පතුය வினாத்தாள் Paper } II

Important:
- Answer **five (05)** questions only selecting the **first** question and **four** others.
- 1st question carries **20** marks and each of the other questions carries **10** marks.

(i)   The following diagram is of a garden fountain with an automatic solar light.

Inputs of the above circuit are from a timer, light sensor and a manual switch.

Timer's value equals 1 from 6.00 p.m. to 6.00 a.m. and it equals 0, from 6.00 a.m. to 6.00 p.m.

The sensor's value equals 1 in day time and the value equals 0 in evening and night.

The fountain and the solar light begins, when the manual switch is on and timer's time is between 6.00 p.m. to 6.00 a.m. Note that the solar light comes on, only when the environment is dark and the fountain is on.

(i)   Draw the circuit diagram using basic logic gates to display that the bulb is on.

(ii)   Write the truth table to the Boolean expression $F = (A + B).(A.\bar{B})$

(iii)   A student plans to develop a presentation for the environment commemoration day. He decides to get scanned pictures from a magazine, using a fat bed scanner and to type necessary details using a key board. He also decides to display the presentation using a multimedia and to copy it into a USB pen before giving out a printed copy of the picture using a laser printer.

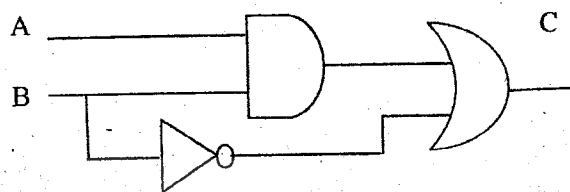Write two input devices and two output devices from above scenario.

(iv) Consider the following situations.
- A. A lift is used to go up and down a building of 15 stories. the lift goes up and down in every two minutes.
- B. To watch a music program on TV on a holyday.
- C. To hold a video telephone discussion with the chief of an institute
- D. Travelling of two trains in opposite direction over bridge with a single track.

Identify the matching data communication mode for the above scenarios and write the term before each of the letters from A to D.

(v) fill in the blanks with the relevant number conversions.

Decimal	Binary	Octal	Hexadecimal
174	....	....	AE_{16}
....	100111011_2	473_8	....

(vi) Write the Boolean expression for the output C

(vii) Operating systems are classified according to its function, Select an example from the list for each operating systems from A to D.
- A. single user
- B. multiuser
- C. multi-tasking
- D. real-time

List: MS DOS   Windows
OS of the calculator
MS Word   Ubuntu

viii) Consider the following statements and state whether each statement is true or false.
a) It is compulsory to have a web browser to roam the Internet.
b) There can be a space in an e-mail address.
c) Domain name server store web sites.
d) There is an error reporting system, when an e-mail is failed to deliver to the recipient.

(ix) Column A contains necessity of a particular web site, and column B contains the web addresses. Match A with B accordingly and write matching pairs in your answer script.

	Group A		Group B
1	e Commerce	P	www.linkedin.com
2	Building up social media	Q	www.bing.com
3	News	R	www.amazon.com
4	Search engine	S	www.bbc.co.uk

(x) Following is an array of 8 elements. Find the suitable terms from the list given below and write it against each number.

...... ❶ ....num :......❷.....[0..❸]of ...❹......;

List (boolean, var, 8 , list , integer , array, 7)

497

2.

Consider the following part of spread sheet of "Harischandra" garments.

	A	B	C	D	E	F	G
1				Harischandra Garments.			
2	Desided price			Selling price			
3	Garment type	Price per garment Rs.			january	February	March
4	Shirts	700		Shirts	630	560	525
5	frocks	600		frocks	540	480	450
6	blouse	500		blouse	450	400	375
7							
8							
9	month	january	February	March			
10	price reduction persentage	10%	20%	25%			
11							
12	Quantity			Price			
13		January	February	March	January Rs.	February Rs.	March Rs.
14	Shirts	2000	2500	2900	1260000	1400000	1522500
15	frocks	3100	3700	4200	1674000	1776000	1890000
16	blouse	2700	2900	3200	1215000	1160000	1200000
17	Income				4149000	4336000	4612500

The Managing Director of this reputed garment has decided the selling price of each item and the prices are entered in cells from B4 to B6.But the board of directors decided to offer discounts and to reduce the sales prices for month of January, February and March, Their discount percentages are in cell B10, C10 and D10 cells.

i.   Write the formula in cell E4 to calculate the discounted price of shirts. This formula needs to be used to calculate the rest of the discounted prices of garments during the given period.

ii. Write the steps to copy the formula in cell E4, from E5 to E6.

iii. Write the formula in cell E17 to calculate total income of month of January.

iv. Write the function to calculate the highest sale between January to March.

v.   Suggest a suitable chart type to comparatively display different levels of income for each garment item from January to March.

3. Consider the following database tables that stores data of a book distribution agent.

Book Table

Book_Id	Book_Name	Author_Name	No_Of_Books	Unit_Price
B100	Mage Jivitha Kathawa	Prof. J. B. Dissanayake	2000	Rs. 180
B101	Kala Nadee Gala Basi	Norbart Ayagamage	4000	Rs. 550
B102	Senkottang	Mahinda Prasad Masimbula	3500	Rs. 300
B103	Himagira Bikshuwa	Sunethra Rajakaruna	5000	Rs. 290

498

Publisher Table

Pub_Id	Pub_Name	ISBN
P001	Dyawansa Jayakody	955-551-126-8
P002	Fast printing	978-955-677-248-7
P003	Santh... a publishers	978-955-0980-00-0
P004	Thanji printers	978-955-0600-15-1

Book_Publisher Table

Pub_Id	Book_Id	Year
P001	B100	2004
P002	B101	2014
P003	B102	2013
P004	B103	2013

i. Mention two suitable primary Keyes with names of the relevant tables.

ii. 3500 copies of "Lovin Thathu Bindak" of the author Anuradha Ariyarathna at the value of Rs.230/= each was added to the store in 2015. Dayawansa Jayakody Company obtained ISBN number - 955-555-128-2 for the book.

    (a) Which table/(s) should be updated.

    (b) Show the new record/ (s) according to above updated table(s)

iii.

    (a) If a single table is used instead of three tables, identify and name the defect that may occur in a situation like this?

    (b) Mention two disadvantages that may arise out of the above situation describe in (a).

iv. It has been announced that "Senkottang" of Mahinda Prasad Masimbula in year 2013 and the "Kala Nadee Gala Basi" of Norbat Ayagamage in 2014, have been recommended for an award at National Literature Award Ceremony.

If the retrieval of record needs to be based on Book name, Authors name, published year, and price, mention the term refers to the Keys with relevant fields.

4. Information technology has been the man's best friend in modern days that helped him to develop some necessary items for his life. But it has also created problems for the man.

    i. Write a Logical Security and one of Physical Security that can be used when using computers.

    ii. Mention two ways of how you would use web recourses without violating the accepted norms.

    iii. Bad e-waste management causes problems to the man and to the environment.

        a. Mention what you mean by e-waste.

        b. Mention two harmful atomic substances that releases to the environment from e-waste.

        c. Mention 2 safe methods to dispose e-waste.

    iv.

        a. What do you mean by Digital Bridge?

        b. Mention two ways to develop Digital Bridge.

5. "Passion Mart "which is a garment retail shop, decides to develop an information system. They assigned this task to a computer system development agency.
   i. Mention steps of system development life cycle (SLDC).
   ii. Explain briefly the steps taken by the agency if they used prototype technology to collect user requirements.
   iii. Following statements are features of both iterative incremental Model and water fall model of collecting data on user requirements. Sort them and label them accordingly,
       A. Identify requirements first.
       B. Ability to use previous knowledge in previous steps by the system developer is an advantage
       C. The next step begins only when the previous step is completely finished.
       D. It is re-modified in rotation until the system is totally developed.
       E. New functions are added and system plan is changed in every circle of the system.
       F. This system developmental model comprise of handling a small segment at a time and develop itself in incremental way.
       G. The unexpected results may occur, as final output is seen at the end of system development.
       H. The main step is started by simply executing system requirement.

   iv. Mention two instances where system developers' mediation is needed in system maintenance.

6. (a) Select the most appropriate words from the list to complete the blanks in statements 1 to 4. Write only the number of the statement and the word.
   [Static, Dynamic, Open source, proprietary, www.nie.lk, www.nic.lk, Hyperlink, Hypertext]

   i. The content of ----------------web always changes. They are created with computer languages such as PHP and ASP.net.
   ii. Kompozer is a -------------------------web authoring tool.
   iii. It is required to apply from--------------------web site to obtain a top level domain name such as .lk.
   iv. Web sites, developed with HTML language are called ----------------web.

(b) Consider the output and the HTML source codes given below and write the necessary tags and attributes to replace numbers 1 to 10 suitably.

Source Code
<html>
<head>
<title>Sandatanne</title>
</head>
<body>
<❶>Worlds End at Moon Plains-Nuwara Eliya<❷>නුවර එළියේ සඳැතන්න ලෝකාන්තය</h1>
<❸="red">
<❹><img src="moon plains.jpg"width="300" height="150"></❹>
<❺>Moon Plains(also known as Sandatanne,Sandagalatanne)is the latest attraction open to public in Nuwara Eliya.It is located few kilometers off Nuwara Eliya. This area is now classified

as an Agricultural and Environmental Tourism Zone by the Municiple of Nuwara Eliya and was declared opened in 25th March 2014.</p>
<h2>Animals who can be spotted in the plains are</h2>
<❻>
Elk
wild buffaloes
dear
leopards
many types of birds
</❼>
<table border="1">
<tr><❽>Route From Nuwala Eliya Moon Plains</the></tr>
<tr><td>Through</td><td>Mahagastota</td>
<tr><td>Distance</td><td>7 km</td>
<tr><td>Travel time</td><td>30 mins</td>
<tr><td>Driving Directions</td><td><❾="sandatanne">see on google maps</td>
</tr>
</table>
<❻>
Opening hours <❿>from 7 AM to 5 PM all seven days</❿>
</❼>
</body>
</html>

(Output)

Worlds End at Moon Plains-Nuwara Eliya
නුවර එළියේ සඳකැන්න ලෝකාන්තය

Moon Plains(also known as Sandatanne.Sandagalatanne)is the latest attraction open to public in Nuwara Eliya.It is located few kilometers off Nuwara Eliya. This area is now classified as an Agricultural and Environmental Tourism Zone by the Municiple of Nuwara Eliya and was declared opened in 25th March 2014.

Animals who can be spotted in the plains are

- Elk
- wild buffaloes
- dear
- leopards
- many types of birds

Route From Nuwala Eliya Moon Plains	
Through	Mahagastota
Distance	7 km
Travel time	30 mins
Driving Directions	see on google maps

- Opening hours from 7 AM to 5 PM all seven days

501

(c) "World's end at Moons plane" is written in Sinhala too. explain how you would save your source code in a situation like this.

7.

(a) A university with around 2000 students, gives "mahaplola scholarship" to the students whose parents' annual income are below Rs. 250000/- and "a student grant" is given. if the parent's annual income level is between Rs250000/- and Rs.500000/-. There is no any grant, if parents' annual income is above Rs.500000/-. The following pseudo code outputs the allowance type once the admission number and the income is input.

```
N=1
while N<=2000
        getAdmssionNumber
        get Income
        if  Income <250000 then
                allowance = "Mahapola"
        else
                if Income<= 500000 then
                        allowance = "Bursary"
        else
                        allowance = "No allowance"
                endif
        endif
        displayAdmssionNumber , allowance
        N=N+1
end while
```

Draw a flow chart to above scenario.

(Use similar variable names in your flow chart as in the pseudo code)

(b) Complete the blanks from ❶ to ❹ in the following Pascal code to print numbers from 10 to 1.

```
Program print_numbers;
var x:❶ ;
begin
❷x := 10 ❸ 1  do
❹(x);
readln();
end.
```

502

7