PROVINCIAL DEPARTMENT OF EDUCATION NORTH WESTERN PROVINCE

THIRD TERM TEST 2020

Grade 11   INFORMATION & COMMUNICATION TECHNOLOGY - I   One Hour.

Name / Index No. :

- Answer all questions.

01. Consider the following statements about second generation computers.

    a. Punch cards were used to input data to the computers

    b. Transistors are used as the main hardware technology.

    c. Producing operating systems.

    d. Floppy disks and tapes were used as secondary storage devices.

    Of the above statements, What are the true statements?

    1. Only A and D   2. Only B and D
    3. Only A, B and C   4. All A, B,C and D

02. Consider the following statements related with Data and Information

    A. Dasun is the tallest boy in the class.

    B. Age of Dasun is 14.

    C. Price of a pen which is in the items list purchased by Akalanka is Rs. 20.00.

    Select the correct answer by considering above statements.

    1. A and B statements belong to information.

    2. A, B and C statements belong to data.

    3. A, B and C statements belong to information.

    4. B and C statements belong to data.

03. Which of the following contains **output devices only**?

    1. Computer screen, Web camera, Touch screen, Flatbed scanner.

    2. Computer screen, Multimedia projector, Printer, Speaker.

    3. Multimedia projector, Printer, Bar code reader, Web camera.

    4. CCTV Camera, Touchscreen, Digital camera, Speaker.

04. …..A….. devices are used to store data and information permanently and they can be divided into many categories. The basic concept of categorizing is ….B…. .

    Select the couple of words that are suitable to fill in the above blanks respectively.

    1. Primary memory, storage capacity.   2. Secondary memory, storage capacity.
    3. Secondary memory, Technology.   4. Storage capacity, Size.

05. Select the correct statement about **computer processor.**

    1. Core I3 is the manufacturer of the processor.

    2. Performance of the computer is not depend on the speed of the processor.

    3. Speed of the processor is calculated by using number of instructions that are executed per second.

    4. Processor is located inside the hard disk.

06. What is the binary number that is equivalent to the hexadecimal number $4EF_{16}$?

    1. 100011101111_2 2. 10011101111_2 3. 10111101111_2 4. 11110101111_2

07. Which of the following answer that represents the ascending order of the numbers $1E_{16}$, 10101001_2, 89_{10}, 115_8?

    1. $1E_{16}$, 89_{10}, 10101001_2, 115_8 2. $1E_{16}$, 115_8, 10101001_2, 89_{10}

    3. 89_{10}, 115_8, $1E_{16}$, 10101001_2 4. $1E_{16}$, 115_8, 89_{10}, 10101001_2

08. What is the octal number that is equivalent to the hexadecimal number $2BC_{16}$?

    1. 1274_8 2. 1324_8 3. 556_8 4. 1354_8

09. Akalanka uses a flash drive with the capacity of 8MB. What is the answer that includes the equal value to that capacity?

    1. 8 X 1024 X 1024 kilobytes   2. 4 x 1024 x 1024 x 8 bytes

    3. 1024 x 1024 kilobytes   4. 8 x 1024 x 1024 x 8 bits

10. Following is the set of coding systems that are used to represent data in the computer. Select the answer that includes the number of bits and characters in each of them respectively.

           A. ASCII

           B. BCD

           C. EBCDIC

    1. **A**- 4bits and 16 characters / **B** - 7bits and 128 characters / **C**- 8bits and 256 characters

    2. **A**- 4bits and 16 characters / **B** - 8bits and 128 characters / **C**- 7bits and 256 characters

    3. **A**- 7bits and 128 characters / **B** - 4bits and 16 characters / **C**- 8bits and 256 characters

    4. **A**- 7bits and 128 characters / **B** - 4bits and 16 characters / **C**- 16bits and 65536 characters

11. Consider the following P, Q and R statements

    P = (A>B) AND NOT (C>D)   Q = (A<B) OR (C>D)   R = NOT ((A<B) OR (A>B)

    The values of A, B, C and D are 30, 45, 63, 36 respectively. What is the correct answer?

    1. True, False, True   2. False, True, True

    3. True, False, False   4. False, True, False

12. Due to the spreading of Covid 19 virus, it is **essential** to wear face mask (A) and washing hands (B) but **not essential** to match the last digit of NIC number (C). What is the Boolean expression that is suitable for the above statement?

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

13. What are the wireless media that are represented by following symbols?

	A	B	C	D
1.	A - Radio waves	B - Bluetooth	C - Infarred	D - WiFi
2.	A - Infarred	B - Bluetooth	C - WiFi	D - Infarred
3.	A - Infarred	B - Wifi	C - Bluetooth	D - Radio waves
4.	A - Radio waves	B - Bluetooth	C - WiFi	D - Networing waves

14. Consider the following ways of connecting computer networks.

A - Router is used to connect a computer network with another external network or internet.

B - Command Line Interface is used when transferring a message to everyone connected with a computer network.

C - Transmission mode of the switch is full duplex and transmission mode of the Hub is half duplex.

1. Only A and C   2. Only A   3. Only A and B   4. All A, B and C
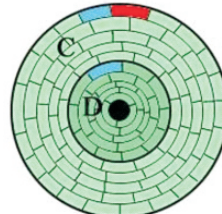
15. What is the picture that shows a hard disk which is after partitioning and formatting?
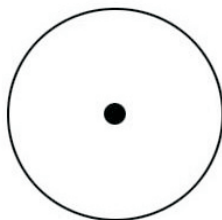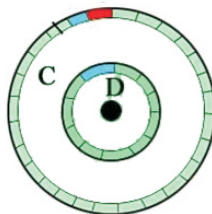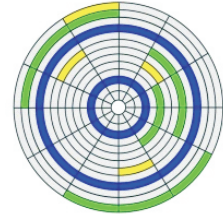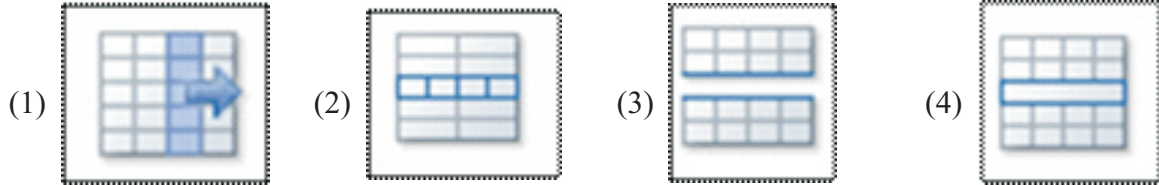

(1)   (2)   (3)   (4)

16. What is the answer that includes software with command line interface (CLI) and graphical user interface (GUI)?

1. Unix, Apple Mac
2. Unix, Dos
3. Ubuntu, Windows XP
4. Isuru Linux , Dos

17. Following picture shows a table which was created by using word processing software. What is the tool which was used to format the cells as A?

$$\left. \begin{array}{|c|c|c|} \hline & & \\ \hline & & \\ \hline & & \\ \hline \end{array} \right\} A \; රුපය \; 2$$

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

18. A set of tools in a tab of a word processing software is as follows. What are the tools which were used to format the following document?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

A
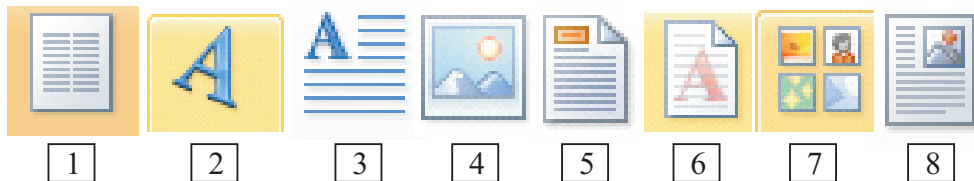
The Benefits of Drinking Water

B

Besides getting your children to drink plenty of milk each day, be sure you don't forget the H_2O! Although it has no nutrients, water is essential   to your child's health. It makes up more than half of children' body   weight and is needed to keep all Pats of the body functioning properly.

රුපය 3

C

1.   A - 6, B - 2, C - 7
2.   A - 2, B - 3, C - 4
3.   A - 8, B - 3, C - 4
4.   A - 2, B - 1, C - 4

19. What is the answer If the formula   =COUNT(A1:C3) is placed in the cell D1 of the following spreadsheet?

	A	B	C	D
1		5	9	
2	10B		12	
3	8	8	20	
4				

1. 6   2. 7   3. 5   4. 4

- Answer questions 20 and 21 using the electronic spreadsheet below.

	CLN	CLO	CLP	CLQ	CLR
5929					
5930					
5931		5	7	35	
5932			5		
5933					

20. The formula =CLO$5931*CLP5931 was written in the cell CLQ5931. If this formula is copied in to the cell CLQ5932, what is the correct formula which can be in the cell CLQ5932?

  1. =CLO$5931*CLP5932   2. =CLO$5931*CLP$5932

  3. =CLO5931*CLP$5932   4. =CLO$5931*CLP$5932

21. If the above formula is copied in to the cell CLQ5932, what is the answer of the cell CLQ5932?

  1. 35   2. 30   3. 25   4. 0

22. The following are some of the shortcut keys used in working with electronic spreadsheet software.

Statements	Shortcut keys	Tasks
A	Ctrl + N	Receives a new slide
B	F5	A slide can be seen across the entire window
C	Ctrl + M	Receives a new submission
D	Ctrl + C	Cutting letters / objects

  1. Only B   2. A, B and C   3. A and B   4. All A, B, C and D

23. What is the incorrect statements about creating a Relational database?

  1. If one record in a table is linked to one record in another table, then there is a one-to-one relationship.

  2. When building a relationship between two tables, one field of the two tables must be at least one or the same.

  3. When constructing a relationship between two tables, the principal fields of the two tables must be the same.

  4. If each record in a table is linked to several records in a table, then there is a one to many relationship between the two tables.

24. What is the answer that includes the correct number of fields and records of the following spreadsheet respectively?

Add-No	Name	DateofBirth	IndexNO	Marks
1001	Sithum	1/10/2014	2324	75
1002	Kanishka	2/20/2004	2025	80
1003	Kavindu	3/5/2004	2110	68
1004	Theekshaí	6/8/2004	2828	90

  1. 5,5   2. 5,4   3. 4,5   4. 9,4

25. Figure 4 shows the objects used in a database management system,

    1. Record
    2. Table
    3. Query
    4. Form

Figure 4

26. The most appropriate answer is to include the blank words in clauses A to D, which are considered when sending an email.

    a. Email address and .... must be present in an email account.
    b. Sending an e-mail address to another person is called.....................
    c. Separate unrelated files sent with email addresses are called.......................
    d. .... is mandatory for both sender and recipient of e-mail.

    1. Password / Forward / Attachments / Electronic Mail account
    2. Attachments / Forward / Electronic / Mail account / Attachments
    3. IP Address / Backward / File / Computer
    4. Web address / sender / attachment / signature

27. The basic building block of a digital graphics is the pixel. If the color size of a pixel is 9, what is the correct answer for the number of bits?

    1. 256   2. 512   3. 3   4. 81

28. What is the tool used to apply color or pattern to a selected part of the GIMP software which is a graphic design software?

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

29. Select false statement regarding digital graphics

    1. Changing the physical scale of a graphic does not change the pixels.
    2. Changing the size of a graphic can be as large or as small as the pixel size.
    3. As the pixel size of graphic increases, so does its quality.
    4. Enlarging a graphic with a smaller pixel size reduces the quality.

30. Consider the following tools in Audacity as software that can be used in audio editing.
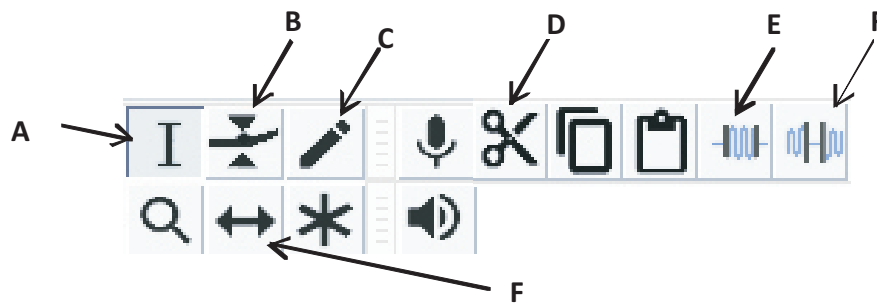
Tools used to select the desired portion of a created audio stream and move the audio portion over time

1. A and E 2. A and F 3. B and F 4. A and C

31. Rhino Soft is a software development company. There are several ways to test a system development life cycle.

  Unit test

  Overall test

  System testing

  Reception test

There are some of the methods which are used to test the system at **Rhino Soft** ?

The answer is,

1. A 2. A and B 3. A, B and C 4. All of the above

32. Which of the following statements is true regarding the benefits of e-government?

A. The services of the Government Information Center fall under the services provided by the Government to the employees.

B. The e-Government is a government that uses information technology to communicate with its citizens, governmental and non-governmental organizations, as well as governments of other countries.

C. Issuing gazette notifications and circulars is a service provided by the government to the citizens.

1. B 2. B and A 3. B and C 4. A, B and C

33. To insert a hyperlink into a web page, select the most appropriate code

(1) Ministry of Education, Sri Lanka

(2) http://www.moe.gov.lk

(3) <a > http://www.moe.gov.lk

(4) Ministry of Education, Sri Lanka

34. Choose incorrect clauses about HTML picks and their functions used in web design.

   1. Uses <ol> ... supports to start a numbered list.
   2.
 to show the end of a sentence
   3. The <tr> lift is used to add a new line to a table.
   4. The Rowspan attribute is used to combine several columns to form a cell.

35. Listed from A to B at the bottom left are some of the problems with the use of information and communication technology. Examples are P to S in the right-hand lane

A	A legal issue	P	Neurological disorders, cancer and skin diseases
B	A moral issue	Q	Theft of intellectual property
C	In an environmental problem	R	Cybercrime
D	A social problem	S	Stealing written things

   Which of the following shows the most suitable P to Q examples for IT problems labeled A to B?

   1. A   R, B   P, C   S, D   Q   2. A   R, B   S, C   P, D   Q
   3. A   Q, B   S, C   P, D   R   4. A   R, B   S, C   Q, Q   P

36. This is a technique that can be used for the logical security of a computer system

   1. Uninterrupted Power Supply
   2. Backup
   3. Closed Circuit TV
   4. Hardware Firewall

37. Study the Pascal program shown on the right and look for its output.

   1. 0, 2
   2. 0, 1, 2
   3. 0, 2, 4
   4. 0, 1, 3

```
Program project1;
Var a,b:integer;
begin
a:=0;
for b:= o to 2 do
        begin
        a:=a+b;
        writeln(a);
        end;
readln;
end.
```

38. Which of the following statements / clauses regarding computer programming languages is correct?

   A. Machine languages can be implemented directly in a computer in a language.
   B. Interpreters and compilers are two translation programs.
   C. High-level languages are machine-independent.

   1. A and B   2. A
   3. B and C   4. A, B and C

39. The following is a field program prepared using the Pascal programming language. Thisfields what is the number of erroneous lines in the program?

    Program one(input,output):

       Var a, sum ; integer ;

             Begin

    a = 50 ;

    sum := 0 ;

             If a <= 100 Then

    sum = sum+ a ;

    a := a+10;

             Writeln (sum)
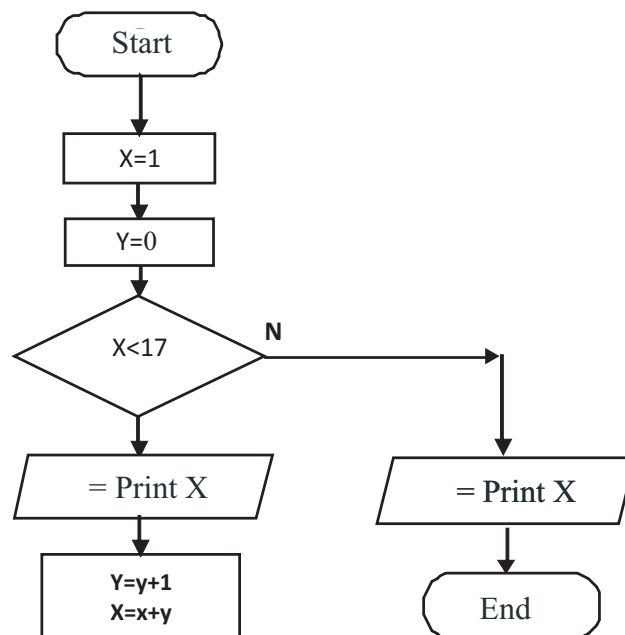
       End.

    1. 6   2. 4   3. 5   4. 3

40. Consider the flow chart shown below.

    Select the answer that correctly indicates the output of the flow chart.

    1. 1, 2, 4, 6, 11   2. 1, 2, 4, 7, 11, 16
    3. 1, 2, 4, 7,11, 16, 16   4. 1, 2, 4, 7, 11, 16, 22

**PROVINCIAL DEPARTMENT OF EDUCATION NORTH WESTERN PROVINCE**

THIRD TERM TEST 2020

Grade 11   INFORMATION & COMMUNICATION TECHNOLOGY - II   **Two Hours**

Name / Index No. :

- **Answer five (05) questions only, including the first question and four (04) others.**

01. (i)   a. Expand the binary number 1011_2 on positional values.

   b. Find the binary equivalent of $AB_{16.}$

   (ii)   a. Name the suitable logic gates for the following incidents.

      i.   A street lamp with a circuit that turns off automatically when the sun is shining well and turns on automatically when it is dark.

      ii.   A passenger who boarding a bus can get off at the front or back door.

   b. If 0 and 1 respectively are given as inputs for A and B in the following logic circuit, name the output of F.
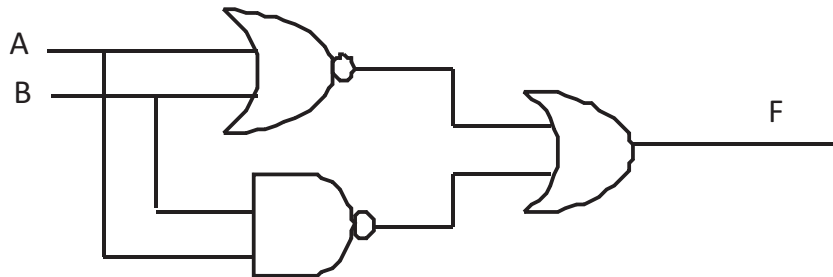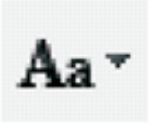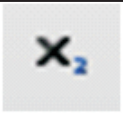
   (iii)   Consider the following computer specifications and answer the given questions.

· Processor	-	Intel Quad core I 9
· Memory Capacity	-	8 GB
· Hard disk Capacity	-	2 GB
· Computer Screen	-	18.5"
· Operating System	-	Windows 10

   a. State the type of the processor and the name of the manufacturer.

   b. Name the capacity of the main memory and explain the importance of the main memory to the computer.

(iv)   Following table lists some of the icons included in the home tab of the Word Processing Software and some related functions. Write down the icon number and matching function label.

Icon		Function	
1.	**Aa ▾**	A.	Subscribs
2.	**X₂**	B.	Sort
3.	**X²**	C.	Change case
4.	**A↓Z↓**	D.	Superscript

(v)   a. Name two job opportunities that related to the Information and Communication Technology.

b. Write down two methods that can be used to dispose e waste safely.

(vi)   Consider the following spreadsheet segment and answer the given questions.

	A	B	C	D	E
1	සිසුන්ගේ නම	මිලදී ගත් අයිස් පලම් ප්‍රමාණය	අයිස් පලමක මිල	මුළු වටිනාකම	
2	චාල්ස්		5 රු15	75	
3	හොවර්ඩ්		8	120	
4	මයිලෙස්		3	45	
5	ජේසප්		2	20	
6	ඇඩා		6	90	
7					
8					

a.   If the formula in cell D2 is $=B2*C\$2$, write down the formula that will appear in cell D5.

b.   Write two formulas to get the total value of ice packets of all students in cell D7.

(vii)   Match items in column A with column B using the knowledge of Internet and Information technology.

(02)

Column A	Column B
1. Domain Name	A Google
2. IP Address	B http://www.nie.lk
3. URL	C 192.251.56.0
4. Search Engine	D nie.lk

(viii) Complete the following table using the knowledge of Application software and relevant examples. (Copy down this table in your answer script)

Spreadsheet software	Document Processing Software	Software for communication	Database software

List - (Skype, Page Maker, Ms Excel, Oracle, Open Office Base, Ms Access, Ms Outlook, InDesign, Open Office Calc, Skype)

(ix)   The following is a segment of Pascal program that included an array of ICT term marks of 50 students

Var ICT :rray[0..50] of Integer

Identify two errors that occurred while writing this segment of program.

(x)   a.   Write each example for lossy compression file format and lossless compression file format in digital graphics respectively.

b.   Following table shows the tools and its functions related to the editing software. Match the tools given in first column to the correct function in the second column.

	Tool		Function
1.		A.	Copy a selected part of an image to another place
2.		B.	To Blur an image
3.		C.	Darkens or sharpens an image
4.		D.	A selection tool

02. (i) There are many benefits as well as problems associated with the use of ICT. Indicate whether the following statements are true or false in related to the issues. (2 marks)

a. Stolen of intellectual property is an issue related to values. (..........)

b. Installing software firewalls is a method to protect a computer logically. (..........)

c. Phishing attack affects the computer system, unknowingly to the user presents itself as harmless. (..........)

d. The pain which occurs from shoulders to the fingers are called as Repetitive stress Injury. (..........)

(ii) We can avoid most of the health issues following correct sitting postures when using the computer. Name two such correct postures. (2 marks)

(iii) Today Cybercrimes have become a big threat to society. Mention two such cybercrimes. (2 marks)

(iv) Write 2 facilities that available to the student and the Education Management Division through online distance learning. (2 marks)

(v) Video conferencing is conducting a conversation using audio and video transmission over computer networks. Name 4 requirements for a video conference. (2 marks)

03. (i) The HTML source of the web page shown in figure 1 is given in Figure 2 with certain missing tags and attributes labeled 1 to 8.

On 31 December 2019, the WHO Country Office for China was informed about cases of pneumonia of unknown cause in Wuhan, China. Authorities identified a new type of coronavirus, subsequently named COVID-19. On 30 January 2020, WHO Director-General declared the outbreak of COVID-19 a Public Health Emergency of International Concern (PHEIC), and on 11 March 2020, COVID-19 was characterized as a pandemic.

To prevent COVID-19, follow these 9 steps:

- Wash your hands frequently and thoroughly
- Avoid touching your mouth, nose, and eyes
- Cover your mouth when you cough or sneeze with the bend of your elbow or tissue
- Avoid crowded places
- Practice physical distancing, try to maintain at least 1m distance from others

We are still in the early stages of understanding this new virus and the disease it causes. For more information click here

Figure 1

```
<html>
<head><title> Sri lanka coid 19 coronavirus </title></head>
<01 >
<center><h1> COID 19 coronavirus</h1></center>
<img  02 =coid.jpg'>
<03  size='4'>
<04  align ='justify'>

On 31 December 2019, the WHO Country Office for China was informed about cases of pneumonia of unknown
cause in Wuhan, China. Authorities identified a new type of coronavirus, subsequently named COVID-19. On 30
January 2020, WHO Director-General declared the outbreak of COVID-19 a Public Health Emergency of
International Concern (PHEIC), and on 11 March 2020, COVID-19 was characterized as a pandemic.
</ 04 >

<05 >To prevent COVID-19, follow these 9 steps: </ 05 >
<06 type='circle'>
<07> Wash your hands frequently and thoroughly </07>
<li> Avoid touching your mouth, nose, and eyes </li>
<li> Cover your mouth when you cough or sneeze with the bend of your elbow or tissue </li>
<li>Avoid crowded places</li>
<li> Practice physical distancing, try to maintain at least 1m distance from others </li>
</ 06 >
We are still in the early stages of understanding this new virus and the disease it causes.
For more information <a  08='https://www.who.int/emergencies/diseases'>click here</a>

</font>

</ body>
</html>
```

Figure 2 – HTML code

Select the matching correct tag or attributes from the following list for each of the labels 1 - 8 given in figure 2 and write down against each label number. (4 marks)

List – (h3, href, body, font, src, ul, p, li, ol.   Herf)

(ii) a. Name two software that can be used to create graphic in the above web page.
(1 mark)

   b. Write down the html code to insert the border around the graphic. (Consider the width of the border is 2 pixels.) .
(1 mark)

(iii) a. Define what is protocol which used in Internet and give 2 examples for protocols.
(2 marks)

   b. Today, cloud computing concept has become popular all over the world. Define that concept and name an advantage and disadvantage of that.
(2 marks)

04.   Following is the data related to the countries in the world affected by corona epidemic as of September 9th 2020, compiled by Worldometers Institute. Answer the following questions.

Note: The number of new cases shown in column C is added to the total number of cases column.

Number of active cases = Total cases – (Total deaths + Recovered)

	A	B	C	D	E	F	G
1	Country	Total Cases	New Cases	Total Deaths	Total Recovered	Active cases	
2	All Countries	20061272	7096	575814	14818804	4666654	
3	USA	6788147		200197	4068086	2519864	
4	India	5020359	2325	82091	3942360	995908	
5	Brazil	4384299		133207	3671128	579964	
6	Russia	1073849		18785	884305	170759	
7	Peru	738020		30927	580753	126340	
8	Colombia	728590		23288	607978	97324	
9	Mexico	676487	4771	71678	481068	123741	
10	South Africa	651521		15641	583126	52754	
11							
12							

Source- https://www.worldometers.info/coronavirus/

(i) 1. Write down the formula that can be used to calculate active cases in USA. Note that this formula is to be copied to calculate the active cases of other countries too.
(1 mark)

The steps necessary to calculate the active cases of other countries are given below.

Select cell …….A…….

Click on icon for ………B…….

Select the range ……..C…….. to …….D…….

lick on the icon for …….E…….

2. Select the correct terms for the labels A to E from the list given below.   (2 marks)

List of terms :- (Paste, Cut, Copy, F3, E3, F10, E10)

3. Write down the formula that should be entered in cell B2 to calculate the total cases reported in all countries.   (1 mark)

4. If above formula copied to cell F2, write down the formula that will appear in cell F2.   (1 mark)

5. Write down the formula that should be entered in cell D11 to find the country with the highest number of deaths.   (1 mark)

(ii) The document given below was created using a Word processing software and it was formatted as indicated by labels 1 to 4.

Practical Test

In this test, you will do a practical test with Microsoft Word and Microsoft Excel

Written test will be held on 20 th February 2020 at 1.30

Further information – http://www.practicaltest.lk

Image A

Practical Test ← 1

In this test, you will do a practical test with **Microsoft Word** and **Microsoft Excel** ← 2

Written test will be held on 20th February 2020 at 1.30
3
4

Further information – http://www.practicaltest.lk

Image B

1. Identify the tool /tools used for each of the formatting tasks indicated by the labels 1 - 3. Write down the number assigned to the formatting tasks 1 - 3 and the relevant label of the tool. (No marks will be awarded if more formatting tools than necessary are given in your answer) (3 marks)

2. Name the tool that can be used in word processing software to link the web site http://www.practicaltest.lk as shown in label no 4. (1 mark)

05.	Below are some of the tables taken from a database of the New Orient private education institute. Identify the relationships between those tables and answer the following questions.

(Student Table)

St_ID	St_Name	Date of Birth	Gender	E-mail
St001	Ruwan	2002/08/23	Male	ruwan.212@gmail.com
St002	Janith	2001/04/30	Male	janith.121@gmail.com
St003	Kamala	2001/11/10	Female	kamal.221@gmail.com
St004	Nishani	2000/10/20	female	nishani555@gmail.com

(Course Table)

Course ID	Course Name	Day	Fees (Rs.)
C0001	English	Sunday	10000.00
C0002	ICT	Saturday	15000.00
C0003	Tech	Saturday	15000.00
C0004	Electric	Sunday	12000.00

(Student course Table)

St_ID	Course_Id	Registerd date
St001	C0001	2020/02/02
St002	C0002	2020/08/05
St003	C0004	2020/08/03
St002	C0001	2020/01/02

1.	What is Primary Key ? Write down 3 primary keys and their respective table names.
(2 marks)

2.	Write down 2 foreign keys and their respective table names.	(2 marks)

3.	Write the most suitable data type to the following fields.	(2 marks)

	i.	St_ID	iii.	Fees

	ii.	Date of Birth	iv.	Gender

4.	How much has Kamala paid to this institution?	(1 mark)

5.	Lakmal (Date of Birth – 2002/05/11 E mail – lakmal.324@gmail.com) is a newly enrolled student on 10th August 2020 to follow ICT course in this institute.

	i.	What tables need to be updated to include the given information?	(1 mark)

	ii.	Write down the updated records along with the respective table names.	(2 marks)

06.	(i)	The Principal and administration section of Wilpotha Anura Maha Vidyalaya maintain a book with details of all students from grade 6 to 13. From this year, they decided to enter the student data to the newly introduced computerized Student Information System by Education Ministry.

	a.	Explain two advantages of maintaining a computerized Information system over the previous manual Information system, as described above.	(2 marks)

	b.	Mention 2 methods that can be used to collect Information efficiently to this new information system.	(2 marks)

	c.	Name the four main methods of testing phase in SDLC and explain two of them.
(2 marks)

d. Explain with reasons how this new information system can be implemented in the school.   (2 marks)

(ii) The concept of computer has become popular in around the world with the use of Operating systems with Graphical User Interface.

a. Write two facts to confirm the above statement.   (1 mark)

b. In which generation operating systems with graphical user interface was introduced?
                                                                                 (1 mark)

07. (i) 07 Write down one of the main difference between machine language and assembly language.   (1 mark)

(ii) Kethmini is an Institute that sells agricultural products. Following is a flow chart which illustrates the recruitment of five new suppliers to this institu te from an interview.

Select the correct expressions for labels A-H from the given list.
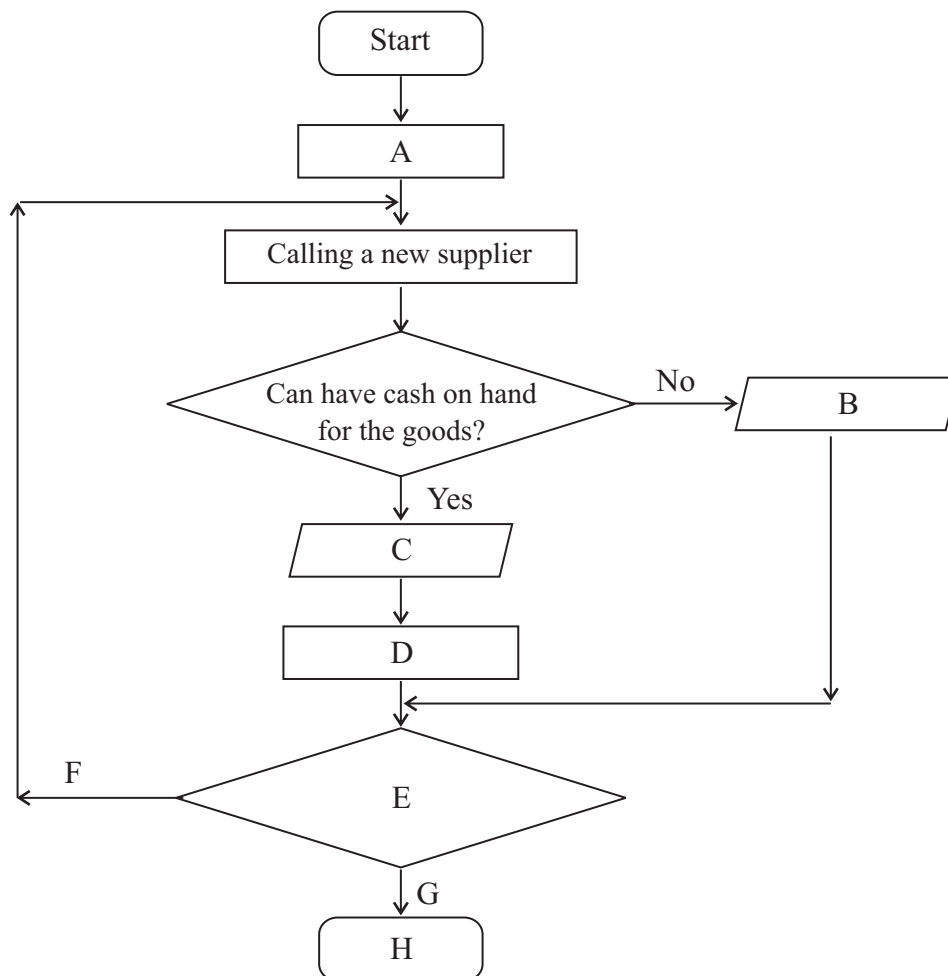
List- (End / You cannot be selected / You have selected / x=0 / x=x+1 / Is x >15? / Yes / No)

                                                                    (1.5 x 8 = 4 marks)

(iii)   Due to the current epidemic, the names of the 150 registered traders of fisherman association are stored in an array. The following is a segment of a program designed for this purpose. Write down answers to the following questions.

```
Var Fishmonger : array [0..149] of integer;
a:integer;
Cus_Name: String;
For a:=0 to 149
Begin
        Writeln('Please Enter your Name');
        read(Cus_Name);
End;
```

1. What is the name of this array?   (0.5Marks)

2. How many elements in this array?   (0.5 Marks)

3. What are the variables introduced here?   (1 Mark)

4. What are the data types of variables?   (1 Mark)

5. Write the starting value and ending value of repetition.   (0.5 Marks)

01. (2)   02. (4)   03. (2)   04. (3)   05. (3)   06. (2)   07. (4)   08. (1)   09. (4)   10. (3)

11. (4)   12. (2)   13. (3)   14. (4)   15. (3)   16. (1)   17. (4)   18. (2)   19. (1)   20. (1)

21. (3)   22. (1)   23. (3)   24. (2)   25. (4)   26. (1)   27. (3)   28. (4)   29. (4)   30. (2)

31. (3)   32. (1)   33. (1)   34. (4)   35. (3)   36. (2)   37. (4)   38. (1)   39. (3)   40. (2)

(ළ. 40)

01. (i)   a. $1011_2 = 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

$= 1 \times 8 + 0 \times 4 + 1 \times 2 + 1 \times 1$

$= 8 + 0 + 2 + 1$

$= 11_{10}$

b. $AB_{10} = \quad A \qquad B$

$= \quad 10 \qquad 11$

$= \quad 1010 \quad 1011$

$= \quad 10101011_2$

(ii)   a.   අ) NOT   ආ) OR

b. $\overline{A+B} + \overline{A.B}$
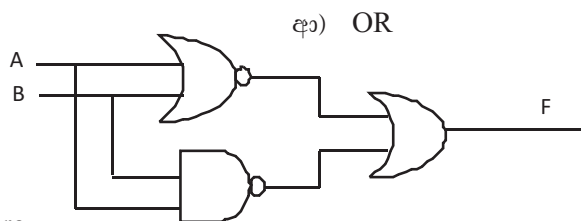
(iii)   a.   වර්ගය - Quad Core

හඳුන්වන නාමය - Core i9

b.   8Gb -   සකස් කිරීමට යොමු කරන තෙක් දත්ත තාවකාලිකව රඳවා තබා ගැනීම සහ තොරතුරු ප්‍රතිදානය කරන තෙක් රඳවා තබා ගැනීම

(iv)   1.   C   2.   A   3.   D   4.   B

(v)   a.   පරිගණක ක්‍රමලේඛ / මෘදුකාංග ඉංජිනේරු/ පරිගණක පද්ධති විශ්ලේෂක ආදී ....

b.   භාවිතය අඩු කිරීම / නැවත ප්‍රයෝජනයට ගැනීම/ ප්‍රතිචක්‍රීකරණය

(vi)   අ) =B5*C$2

ආ) =sum(D2:D6) ,=D2+D3+D4+D5+D6

(vii)   1–4 , 2–3 , 3–2

(viii)

ගිණුම්පත්‍ර සැකසීමේ මෘදුකාංග	ලිපිලේඛණ කටයුතුවලට අවශ්‍ය මෘදුකාංග	සන්නිවේදන කටයුතු සඳහා මෘදුකාංග	දත්ත සමුදාය මෘදුකාංග
Ms Excel, Open Office Calc	Skype, Page Maker, InDesign	Ms Outlook, Skype	Oracle, Open Office Base, Ms Access

(ix)   Var ICT :array[0..50] of Integer

a.   0.49 විය යුතුයි / integer;

(x)   a.   හානි වන සංකෝචන ගොනු ආකෘති - JPEG,TIFF,BMP

හානිනොවන සංකෝචන ගොනු ආකෘති - GIF, PNG,RAW

b.   1.   C   2.   A   3.   B   4.   D

(01)

02. (i)   අ. අසත්‍යයි.   ආ. සත්‍යයි.

        ඇ. අසත්‍යයි.   ඈ. සත්‍යයි.

   (ii)   1. පරිගණක තිරය සහ ඇස් අතර පරතරය අගල් 18-28 පමණ වීම.

        2. පරිගණක තිරය තමාගේ ඇස් මට්ටමට හෝ ඊට වඩා පහතින් හෝ පිහිටන සේ පරිගණක පුටුව සහ මේසය හැඩ ගස්වා ගැනීම ආදී ඕනෑම කරුණක්

   (iii) 1. අනවසරයෙන් පුද්ගලයන්ගේ ඡායාරූප අන්තර්ජාලයට මුදා හැරීම

        2. කාන්තාවන්ගේ හෝ තරුණියන්ගේ නොගැලපෙන ඡායාරූප හෝ වීඩියෝ පට අනවසරයෙන් අන්තර්ජාලයට මුදා හැරීම සහ ඒවා උපයෝගී කර ගනිමින් ඔවුන් බිය වැද්දීම/තර්ජනය කිරීම හෝ කප්පම් ගැනීමට පෙළඹීම ආදී ඕනෑම කරුණ

   (iv) ශිෂ්‍යයාට -

        1. නම්‍යශීලී කාල රාමුවක් නිසා පහසු ස්ථානයක සිට ඕනෑම වේලාවක අධ්‍යාපනය ලබා ගත හැකි වීම.

        2. මාර්ගගත පැවරුම් හා ප්‍රශ්නාවලි ලබා ගැනීමේ පහසුව.

        අධ්‍යාපන කළමනාකරණ අංශයට

        1. පැවරුම් අධීක්ෂණය සහ ප්‍රතිඵල දැක්වීම.

        2. ගුණාත්මක ඉගෙනුම් ඒකක පද්ධතියට එකතු කිරීමට හැකිවීම.

   (v)   අ. පරිගණක / වෙබ් කැමරාව / අන්තර්ජාල සම්බන්ධතාව / සන්නිවේදන මෘදුකාංග

03. (i)   1 body   2 src   3 font   4 p

        5 h3   6 ul   7 li   8 href

   (ii) අ) gimp, photoshop   ආ) table border=”2”

   (iii) අ) පරිගණක ජාල තුළ ක්‍රියාත්මක නීති පද්ධතියකි. උදා/ - HTTP, IP, FTP, SMTP

        ආ) පෞද්ගලික පරිගණක ඇතුළු සියලු පරිගණක ජාල සහ ජංගම මෙවලම් සියල්ලත් රැහැන් රහිත අන්තර්ජාල සම්බන්ධතා ඔස්සේ ඒකාබද්ධ ව අවශ්‍ය ඕනෑ ම මොහොතක ඕනෑම තැනක සිට තොරතුරු ලබා ගැනීමට හා තැන්පත කිරීමට පහසුකම් සලසන ක්‍රමය

            වාසි

            - මෘදුකාංග සඳහා යන වියදම අඩුවීම

            - කාර්ය සාධනය වැඩි දියුණු වීම

            - නඩත්තු ගැටලු අවම වීම

            අවාසි

            - නොකඩවා පවතින අන්තර්ජාල පහසුකම් අවශ්‍ය වීම

            - අඩු වේග සම්බන්ධතා වලදී ක්‍රියාකාරීත්වය අඩුවීම

04. (i)   1. =B3-(D3+E3)

        2. A-F3 B- පිටපත් කිරීම   C-F3   D-F10   E- ඇලවීම

        3. =SUM(B3:B10)

        4. SUM(F3:F10)

        5. MAX(D3:D10)

   (ii) 1. 1 - A, B 2 - 1 3 - G

        2. HYPERLINK

05. (1)   වගුවක රෙකෝඩ අනන්‍යව හඳුනාගත හැකි තීරුවක් ප්‍රාථමික යතුර ලෙස හඳුන්වයි.

        ශිෂ්‍ය වගුව (Student Table) වගුවේ St_ID / පාඨමාලා වගුව (Course Table) වගුවේ Course_ID

   (2)   පාඨමාලා (Course Table) වගුවේ St_ID සහ පාඨමාලා (Course Table) වගුවේ Course_Id

   (3)   (i) St_ID - Text   (iii) Fees - Currency

        (ii) Date of Birth - Date & Time   (iv) Gender - Boolean

   (4)   රු. 12 000.00

(5) (i) ශිෂ්‍ය වගුව (Student Table) සහ ශිෂ්‍ය පාඨමාලා වගුව (Student course Table)

(ii)
ශිෂ්‍ය වගුව (Student Table)

St_ID	St_Name	Date of Birth	Gender	E-mail
St005	Lakmal	2002/05/11	Male	lakmal.324@gmail.com

ශිෂ්‍ය පාඨමාලා වගුව (Student course Table)

St_ID	Course_Id	Registerd date
St005	C0002	2020/08/10

06. (i) අ) සකසන ලද වැඩසටහනකට අනුව තොරතුරු ලබා දෙන බැවින් දෝෂ ඇතිවීම අවම වීම.

- ඉතා අඩු කාලයකින් තොරතුරු සකසා ගත හැක.

අා) නිරීක්ෂණ/ සම්මුඛ සාකච්ඡා/ ප්‍රශ්නාවලි/ වාර්තා හෝ ලිපි ගොනු

ඇ) ඒකක පරීක්ෂාව / සමස්ත පරීක්ෂාව/ පද්ධති පරීක්ෂාව/ ප්‍රතිග්‍රාහන පරීක්ෂාව

ඒකක පරීක්ෂාව - පද්ධතියේ ඒකක වෙන වෙන ම පරීක්ෂා කෙරේ. පරීක්ෂා කෙරෙන ඒකකය තුළ ආදානයට අදාළ ප්‍රතිදානය ලැබේ.

සමස්ත පරීක්ෂාව - එක් එක් ඒකක නිසි ලෙස ඒකාබද්ධ කර පරීක්ෂාවට ලක්කිරීම

ඈ) සමාන්තර පරීක්ෂාව - පවතින පද්ධතිය හා නව පද්ධතිය යම් නිශ්චිත කාලයක් තුළ සමාන්තර ව පවත්වා ගෙන යනු ලැබේ. නව පද්ධතිය සාර්ථක වන්නේ නම් පැරණි පද්ධතිය නවතා නව පද්ධතිය ක්‍රියාවට නංවනු ලැබේ.

(ii) අ) චිත්‍රක පරිශීලක අතුරු මුහුණත් සහිත මෙහෙයුම් පද්ධති නිර්මාණය කිරීමේ දී ප්‍රධාන සංරචක හතරක් භාවිත කරමින් මිත්‍රශීලී පරිසරයක් සකස් කර ඇත. එනම්

කවුලු / නිරූපක / මෙනු/ දක්වන

අා) හතරවන පරම්පරාව

07. (i) යන්ත්‍ර භාෂාවෙන් ලියන ලද ක්‍රමලේඛයක් ක්‍රියාත්මක වීම ඉතා ම වේගවත් වන අතර එසෙම්බ්ලි භාෂාවෙන් ලියන ලද ක්‍රමලේඛ ක්‍රියාත්මක වීමේ වේගය සාපේක්ෂ ව අඩුවේ.

(ii) A x=0   B ඔබව තෝරාගත නොහැක   C ඔබව තෝරාගන්නා ලදී

D X=X+1   E X YS අගය 15ට වැඩි ද?   F නැත

G ඔව්   H අවසානය

(iii) (1) Fishmonger

(2) 150

(3) a, Cus_Name

(4) String , Integer

(5) 150

(6) ආරම්භක 0   අවසාන 149

(03)