Department of Education - Western Province

G.C.E. (O/L) Support Question Paper - 2021

| Grade: 11 | Information and Communication Technology Paper - I | Time: 03 hours |

- **Answer All Questions.**

(01) Problems that can arise when using a computer, and remedies that can be used to avoid them are shown in the table below. However, the remedies in the second column are not in the order of the problems in the first column.

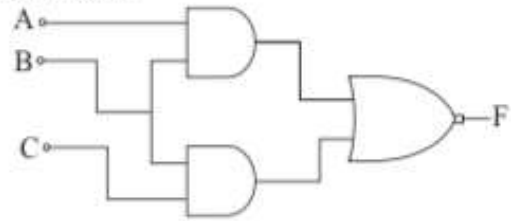| Problem	Solution
A - Protecting your computer system and documents in the event of an unexpected power outage.	P - Firewall
B - Protecting the computer system from unauthorized access.	Q - Uninterruptible power supply
C - Controlling the voltage of the power supply to computer equipment	R - Duplicates
D - Protecting vital data and information stored in a computer system in the event of a crash.	S - Surge protector

The most appropriate remedies for given problems respectively are

1. PQRS   2. QPRS   3. QPSR   4. SPQR

(02) Which of the following does not affect the loss of manipulative skills, which is a social problem arisen with the advancement of information technology?

1. Replacing of man power and skills by industrial machineries
2. Closure of libraries and the related job loss due to electronic books and magazines.
3. Loss of jobs related to laboratory work due to the ability to check health status from home
4. Arising of an opportunity to build broader social relationships with the popularity of social networking sites.

(03) The protocol used to transmit information between computers on the Internet is,

1. WWW   2. HTTP   3. URL   4. DNS

(04) The IP addresses used to identify computers in the Internet are normally written in the form p.q.r.s. The range of the values each of the four fields p, q, r and s can take is,

1. 0 - 250   2. 0 - 255   3. 0 - 200   4. 0 - 256

(05) Consider the following logic circuit.

What is the logic expression represented by this circuit?

1. $((A+B)'+(B+C)')$
2. $((A.B)+(B.C))'$
3. $((A+B).(B+C))$
4. $((A.B)'+(B.C))$

(06) The incorrect statement about the evolution of the computer is,

1. The use of punch cards for data input, storage and output was during the first generation.
2. Operating systems with graphical user interfaces were used in the second generation.
3. Keyboard and mouse were used for data input in the third generation.
4. Microprocessors were used during the fourth generation as the hardware technology.

(07) Which of the following statements is true regarding computer memory?

A. Cache memory stores data which are frequently used by the central processing unit.
B. The Basic Input Output System (BIOS) reads the Master Boot Record (MBR) required at boot time.
C. When the power supply of a computer is disconnected, all data in the read-only memory (ROM) are erased.

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

(08) When the devices in column A are matched with the most appropriate term in column B, Corresponding letters in order will be,

	A		B
1.	Hard disc	P	Input method
2.	Optical character recognition	Q	Magnetic technology
3.	Random access memory	R	arranging a set of numbers sequentially
4.	Arithmetic and logic unit	S	main memory

1. PQRS
2. QPSR
3. RQPS
4. SRQP

(09) The binary number equal to the hexadecimal $B0_{16}$ is,

1. 10010000_2
2. 10111000_2
3. 10110000_2
4. 11000000_2

(10) Which of the following answers represents the descending order of the four numbers 1011_2, 11_8, AB_{16} and 70?

1. AB_{16}, 70, 1011_2, 11_8
2. 1011_2, AB_{16}, 70, 11_8
3. 70, AB_{16}, 1011_2, 11_8
4. 11_8, 1011_2, AB_{16}, 70

(11) The shortcut key used to open a document in word processing software is,

1. Ctrl+ O   2. Ctrl+ N   3. Ctrl+ V   4. Ctrl+ H

(12) Consider the following statements

     A - The BCD coding system uses 4 bits to represent a single digit.

     B - The maximum number of characters that can be represented by the ASCII code is 256.

     C - The maximum number of characters that can be represented by the 101001011, code system is 256

     D - Internet web sites use the Unicode system to create newspapers.

Which of the above statements is/are correct?

1. A only   2. A and B only
3. A and D only   4. All of the above

(13) The most appropriate clause to describe the above computer port is,

1. This is used to connect a modem to a computer
2. This is used to connect a multimedia projector to a computer
3. This is used to connect a printer to a computer
4. This is used to connect audio devices to the computer

(14) What is the output value of Display X in the given pseudo code?

```
Begin
X=1
While X<10
    X=X+1
End while
Display X
End
```

1. 10   2. 11   3. 9   4. 1

(15) Which of the following devices acts as a data converter?

1. Modem   2. Firewall   3. Switch   4. Router

(16) The network shown in the figure belongs to,

1. Star type network   2. bus type network
3. Ring type network   4. Mesh type network

(17) The most significant digit in 0.013250 is,

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

(18) Consider the following statements on connection devices in computer networks.

    a. The hub transmits information to all computers.

    b. The switch transfers information only to the relevant computer.

    c. The hub uses full duplex method in information transmission.

Which of the above statements is/are true?

1. A and B only   2. B and C only

3. B only   4. All of the above

(19) When the equation =COUNT(A1:C3) is entered in the cell D1 in the following spreadsheet, the answer will be,

1. 4   2. 5

3. 9   4. 21

	A	B	C	D
1		1		
2	10B		7	9
3		4		

(20) Following are three functions used in an electronic spreadsheet

A =SUM(A3:C5,E7)   B =SUM(C3:C10)-SUM(E3:E9)   C =SUM(B4:B7+A2)

Which of the above are valid functions?

1. A only   2. B only

3. A and B only   4. All of the above

(21) The method which is **not** used to insert a new slide into a presentation is,

1. Select the new slide option in the Insert Tab.

2. Select a slide in slide window and press Enter key.

3. Use the "Ctrl + M" key combination.

4. Use the "Ctrl + N" key combination.

(22)

	data	Model value
i	Item code	S12310
ii	price	2500.00
iii	Required quantity	30
iv	TP number	0716087828

It is expected to enter the data as shown below to a database table prepared by database software. Select the answer that shows the most suitable data type for each data respectively.

1. Number, Number, Number, Text   2. Text, Currency, Number, Number

3. Text, Currency, Number, Text   4. Number, Currency, Text, Text

(23) It is needed to obtain the Employee number, name and address of the employees whose designation is Manager, from a database. This output can be obtained

1. Using the Foreign key   2. By preparing a query

3. By preparing a form   4. By preparing a relationship

(24) Consider the following statements regarding a database management system.

      A - An image can be input as data to a data table.

      B - Only two tables are used to create a query

      C - A form is used to input data into a data table.

Choose the correct statement / statements from above.

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

(25) In a student database table of a school, the collection of data relevant for one student is a ....

The most appropriate word to fill in the blanks in this sentence is,

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

(26) It has been proposed to implement a new automated school management information system for a school.

The principal's opinion is that it is not safe to completely stop the existing manual system and start the new system.

Which of the following methods are suitable for the need of the principal?

1. Direct or phase implementation
2. Direct or pilot implementation
3. Parallel or phase implementation.
4. Parallel or direct implementation

(27) One of the main quantities that determines the quality of a digital graphic is its resolution. Graphic resolution is measured by,

1. Dots per pixel (dpp)
2. Bits per pixel (bpp)
3. Pixels per graphic(ppg)
4. Pixels per square inch (ppi)

(28) Several statements about vector graphics are shown below.

      A - When stored in a computer memory, vector graphics takes less space than a raster graphic.

      B - Changing the scale does not affect the quality of the graphic

      C - Suitable to create large graphics.

Which of the above statement / statements are true?

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

(29) In a word processing software, the toolbar that contains the icon shown here is:

1. Standard toolbar
2. Formatting toolbar
3. Menu bar
4. Title bar

(30) When the expression = 2 ^ 3 / (5-1 ^ 3) * 5 is inserted into a cell in a spreadsheet software, the value displayed after pressing the enter key is,

1. 2   2. 0.4   3. 10   4. 0.8

(31) In spreadsheet software, an incorrect cell address is,

1. H4   2. $H4   3. H$4$ 4. H$4

(32) The correct expression in the use of functions in spreadsheet software is,

       A) = SUM(A1,A5)
       B) = AVERAGE(A1:C1,B2)
       C) = COUNT(A1,$A1)

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

(33) Consider the following statements
     A - A DVD has more capacity than a CD.
     B - Data can be written only one time in to a blue-ray disc.
     C - Data is read out in CD, DVD and Blue-ray disc using optical media.

The correct statement /statements from the above is / are
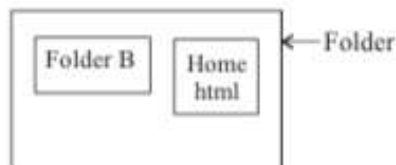1. A only   2. A and B only
3. B and C only   4. A and C only

(34) Data are entered to the central processing unit (CPU) of a computer system within a shortest time period by,

1. Hard Disk   2. Magnetic Tape
3. Main Memory   4. Compact Disk

(35) The answer with the correct order of three main tags i.e. starting tag, list item tag and description tag in description lists is,

1. <dt>, <dl>,
2. <dl>, <dd>, <dt>
3. , <dl>, <dt>
4. <dd>, <dt>, <dl>

(36) Suppose we need to insert an image file named trees.jpg into the home.html web page and that image is saved in Folder B. The appropriate HTML code is:

1. <img src= "trees.jpg" alt="Trees" width="300px">
2. <img src= "folder A/trees.jpg" alt="Trees" width="300px">
3. <img src= "trees.jpg/folder B" alt="Trees" width="300px">
4. <img src= "folder B/trees.jpg" alt="Trees" width="300px">

(37) Which of the following HTML code can be used to insert a background color to a web page?

1. <body color='yellow'></body>
2. <background color='yellow'></background>
3. <body bgcolor='yellow'>
4. </body> <body background-color='yellow'></body>

(38) What is the output of the following Pascal code?

```
Program command(output);
    var x , count: integer;
    Begin
    For x:= 0 to 2 do
            Write('#');
    For x:= 1 to 3 do
            Writeln('#') ;
    ReadIn;
    End.
```

1. # # #
   #
   #
   #

2. # # # #
   #
   #

3. # # #
   # # #

4. # # # #
   #
   #

(39) Which of the following answer includes the correct variable names that can be used in a Pascal program?

1. Std_no, stdno
2. A15,10B
3. 10A , std-no
4. std no, A10

(40) What is the output value produced by Display Z in the given pseudo code?

```
Begin
a = 1
b = 1
While a = b
    a = a + 1
    b = b + 2
    Z = a + b
End while
Display Z
End
```

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

Answer five questions with the first question.

(01) (i) The table below shows some of the networking devices in the first column and their uses in the second column. Write down the most suitable situation that matches each device, in the correct order.

(It is sufficient to write the relevant number and the relevant label number)

	Device			Usage
1	NIC		A	Makes connections between two or more computer networks.
2	Switch or Hub		B	Creates a computer network connection using radio waves.
3	Router		C	Connecting the computers to the computer network and creates connection
4	Wi-Fi adapter		D	Connects two or more computers

(ii) (a) Convert the binary number 1111011100101₂ to a hexadecimal number

(b) Convert the above binary number to an octal number.

(iii) Select tasks related to each tool in GIMP software.

	Tool			Task
1			P	Remove area as required
2			Q	To show the length and angle
3			R	To select the parts of a graphic with the help of mouse
4			S	To darken a selected part of a graphic

(iv) Consider the following statements, in relation to the URL **http://www.nie.lk/syllabuses/sinhala/grade10/ict.pdf**. and label them as true or false in front of them
A - In this URL, www is the service
B - In this URL, 'nie.lk' is the top level domain
C - In this URL, ict.pdf is the home page of the website.
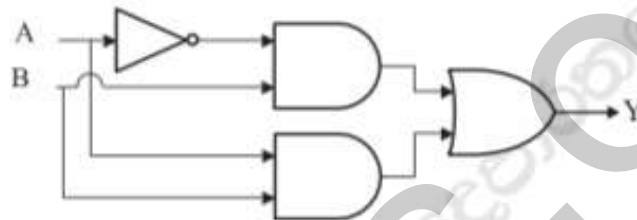D - The resource location in this URL, can be considered as /syllabuses/sinhala/grade10/.

(v) Write one advantage and one disadvantage of conducting an online examination rather than conducing in the traditional way.

(vi) Identify four tools that can be used to create this sentence.

Rain^2 Go **away** …….. Come <u>again</u> *another* day

(vii) The following logic circuit diagram shows two inputs as A and B. Write the Boolean expression for the output Y

(viii) Hub and switch are two devices that connect computer networks. Write down how they differ from each other.

(ix) A few of the icons in a word processing software, labeled as 1 to 4, are shown below. Identify the correct tool name from the tool names listed below and write it in front of each label

| 1 | 2 | 3 | 4 |

(Repeat typing, Undo Typing, Spelling & Grammar, Font Color, Word Art, Picture)

(x) Write down the output of the program shown below.

```
PROGRAM MYPRG;
VAR x ,y : INTEGER;
BEGIN
      For x:=1 To 4 Do
         BEGIN
            y:=x+4;
            Writeln(y);
         END;
   END.
```

(02) (A) Sumituro is a local organization that supports poverty alleviation projects. Foreign Institutions and Individuals provide donations for their activities. Money received and payments made during August 2021 are as follows.

	A	B	C	D	E
1	Money received and Payments for August 2021				
2		Income		expenses	
3	Income Category	Value ($)	Value (Rs)	Name of the project	Value (Rs)
4	Mitsu Japan Company	7000	1400000	Attanagalla Water Project	1500000
5	Melbourne Cricket Club	5000	1000000	Student relief program	750000
6	Omega Company	3000	600000	Innovation Project	2000000
7	Pig Football Company	10000	2000000		
8					
9	Total Income				
10	Total Cost			US$ 1 ($ල$) Exchange rate US $ 1 (Rs.)	200
11	Balance - Month of August				

i) Write down a formula of the following type to indicate the total income in US Dollars (US $) in cell B9 = function(cell1: cell2) (1 mark)

ii) Write a formula in cell C4, using only cell references, to find the rupee value of the amount of US dollars (US $) provided by Mitsu Japan company. (It should be possible to calculate the value funds provided by other aid institutions and organizations in rupees, by this formula.) (2 marks)

iii) The function to show the cost of all the projects is given in cell B10, as shown bellow.

= function I (cell I: cell2)

Write the relevant terms for function 1, cell 1 and cell 2 (2 marks)

iv) Write a formula to indicate the August balance of Sumituro organization in rupees at cell B11 (1 mark)

(B) Select the names corresponding to the diagrams from parentheses and write them down, in relation to presentation software. (4 marks)

1.   2.   3.   4.

[Notes Master, Normal View, Slide sorter view, Reading view]

(03) Open sale organization facilitates its customers to order and purchase goods online. Following are some of the data tables from the database maintained by the organization.

Order table			
Order number	Order	Customer number	Distribution Officer No.
A1002	B9X Digital clock	101	Dis_10
A1005	A3S Mobile phone	102	Dis_10
A1008	Printer	103	Dis_11
A1007	¢Hard disk	103	Dis_12

Distribution Officer	
Distribution Officer No	Name
Dis_10	R. Kurera
Dis_11	A. Lal
Dis_12	K. Amara

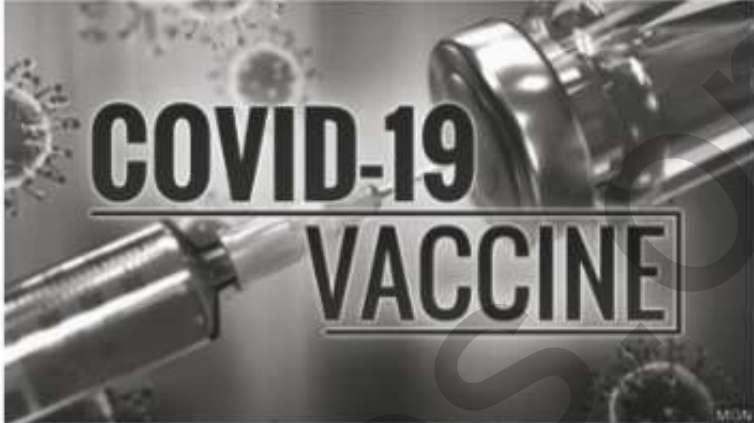| Customer table		
Customer number	Name	Telephone number
101	A.R. Perera	0771586954
102	K.P. Kumari	0785487521
103	J.A. Namali	0717748542

a) It is clear from the tables that there exist links between database tables.

i) Write down two primary keys with the relevant tables. (1 mark)

ii) Mention the types of relationships between the customer table and the order table as One-to-One, One-to-Many, Many-to-Many and give reasons also.
(3 marks)

b) A foreign key can be used to build a relationships between data tables. Explain what a foreign key is, in relation to the data tables in the above database and name a foreign key field. (2 marks)

c) Customer A. B. C. Perera with Customer number 104 and Telephone number 077 2050657, places an order for an LG keyboard under order number 1009. This is distributed by R. Kurera. In relation to this event,

i) Name the tables that need to be updated (2 marks)

ii) Show the updated data tables. (It is sufficient to show only the new record)
(2 marks)

(04) HTML code for the following web page is shown below. Select appropriate words for the labels shown in bold, from the parenthesis and write them in front of the corresponding number.

Statistics and Research

Coronavirus (COVID-19) Vaccinations

25.8% of the world population has received at least one dose of a **COVID-19 vaccine**. 3.54 billion doses have been administered globally, and *29.96 million are now administered each day*. Only 1% of people in low-income countries have received at least one dose.

- Our vaccination dataset uses the most recent official numbers from governments and health ministries worldwide.
- The population estimates we use to calculate per-capita metrics are all based on the last revision of the United Nations World Population Prospects
- A full list of our country-specific sources is available at the bottom of this page, and we also answer frequently-asked questions there

In our Data Explorer you can see all of our data on COVID-19 vaccinations (doses administered, people with at least 1 dose, and people fully vaccinated).

more information - click here

```
<html>
 <head>     <title>Coronavirus</title>
 </head>
 <body>
    <p><1>Statistics and Research</1></p>
 <h2><2>Coronavirus (COVID-19) Vaccinations</2></h2>
 <p>25.8% of the world population has received at least one dose of a
 <b>COVID-19 vaccine.</b> 3.54 billion doses have been administered globally,
    and <3>,<i>29.96 million are now administered each day</i></3>. Only
    1% of people in low-income countries have received at least one dose.</p>
 <p><4 src="vaccinepic.jpg"></p>
 <5>
    <li>Our vaccination dataset uses the most recent official numbers from
    governments and health ministries worldwide. </li>
    <6>The population estimates we use to calculate per-capita metrics are all
    based on the last revision of the United Nations World Population Prospects.
    </6>
 <li>A full list of our country-specific sources is available at the bottom of this
 page, and we also answer frequently-asked questions there.</li>
 </5>
 <p 7="center"><b>In our Data Explorer you can see all of our data on COVID-
 19 vaccinations (doses administered, people with at least 1 dose, and people fully
 vaccinated).</b></p>
 <img 8="draft.jpg">
 <p><10>more information - <9 href="https://www.who.int ">click here</9
 ><10></p>
 </body>
 </html>
```

(bullets, hyperlink, colspan, td,table, i, list , ol, u , a , img, b , ul , li , align , src, center, caption, face, tr) (10 marks)

(05) (A) An email prepared to be sent is shown below. With regard to that, provide short and concise answers to the following questions.

> **Informing inability to come to the meeting**
>
> To   Amara Kumara x
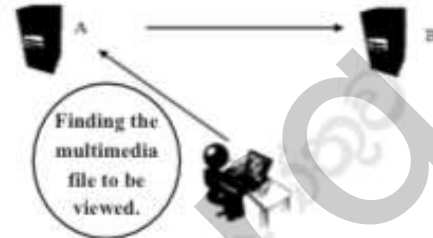> Cc   Santha Marasinghe x Saman Rajakumara x
> Bcc Namal Perera x Somalatha x
> **Informing inability to come to the meeting**
>
> **Dear all,**
> **Due to an unvoidable reson. Kindly inform you that it is unable to come to the**
> **meeting today**
> **Thank you**
> **Regards.**
> **Kumara Perera.**

↶ ↷ Sans Serif ▾ 〒▾ B I U A▾ ▤▾ ≣ ≔ ⊞ ⊟ ❞ ⟲ ✗

Send ▾ A ⬙ ∞ ☺ ⬢ ▣ ⬙ ✎

i) To the recipient Santha Marasinghe, who will be shown as the other recipients of this message? (1 marks)

ii) To Namal Perera, who will be shown as the other recipients of this message? (1 mark)

(B) Below is an incomplete diagram of the process that takes place when a user watches a video file from www.youtube.com.

i) Write down the equipment represented by A and B. (1 mark)

ii) What is the place where the web site www. youtube. com is hosted (A or B)? (1 mark)

iii) "A file from B comes to the user through A" Do you agree with this statement? (1 mark)

(C) Consider the following statements regarding presentation software. If the statement is true indicate it by (✓) and if false, indicate by (✗)   (4 marks)

i) Slide transition can only be used when switching from one slide to another slide.   (   )

ii) The shortcut key combination Ctrl + N can be used to insert a new slide to a presentation.   (   )

iii) Slide Layout can be used to animate text and images in an electronic presentation software.   (   )

iv) It is possible to go to the next slide by pressing the N key on the keyboard during a slide show.   (   )

(06) (A) Consider the statements under columns X and Y below regarding the construction of a computer-based information system

X Column	Y Column
1. A method of gathering information used to identify user needs.	A - The final stage of Systemtesting and debugging.
2. The main function of the system design	B - Examining records and files.
3. A function of the system maintenance step	C - The overall implementation of the system depends on the success of the system performance with the selected sample.
4. An advantage of pilot implementation	D - The system is adjusted according to the newly identified user requirements.
5. checking the user's acceptance	E - Determining the appropriate hardware and software to operate the systems.

(5 marks)

(B) Electronic products are discarded as electronic waste at the end of their operational period.

   i) Name two health problems that human beings may face due to improper disposal of this electronic waste. (1 mark)

   ii) Write down two methods that can be followed to dispose electronic waste safety. (1 mark)

(C) Malicious software (A, B, C), nature of the damage (P, Q, R) and the safety measures (X, Y, Z) to prevent damage are shown below. Match each malicious software to the nature of the damage and the safety measures that can be taken to prevent such damage, and write them down in terms the labels given. (3 marks)

Malicious software	
A	spies
B	bots
C	fishing

	The nature of the damage
P	Collects information about bank accounts or electronic accounts by e-mail and tricks the user and steals money deposits.
Q	Pretends to be genuine and enters the computer system and steals or erases data without the user's knowledge.
R	Collecting personal information via instant messaging and online conversations

	Safety measures that Can be followed
X	Avoid opening suspicious emails or avoid clicking on links in attachments.
Y	Check documents or software with antivirus software, before downloading.
Z	Do not enter personal information without checking the security of the website

(07) (i) Assume that the face values obtained when a tetrahedron with sides labeled as A, B, C and D is thrown 10 times, are stored in an array named X.

Write down the terms represented by the labels P, Q, R and S in the algorithm below to calculate how many times the face A has been obtained.

x - Array **count-** The number of times the face A falls **i-** index number of the array
As shown

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

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

(ii)   A flow chart is corresponding to this pseudo code is shown below. Name
A, B, C, D, E and F.