



PROVINCIAL DEPARTMENT OF EDUCATION NORTH WESTERN PROVINCE

THIRD TERM TEST 2020

Grade 10 INFORMATION & COMMUNICATION TECHNOLOGY - I One Hour.

Name / Index No. :

- Answer all questions.
 - Underline the correct or most suitable answer among given answers.
01. In a modern industry which produces toy cars when insert relevant parts it issues a toy car to the market. What is the correct answer regarding the input, process and output of this incident respectively.
- | | |
|---|--|
| (1) Input - Engine, wheels, Stearinwheel, body
Process - Issuing to the market
Output - Toy car | (2) Input - The factory which produces motor cars
Process - Assembling
Output - Toy car |
| (3) Input - Engine, wheels, Stearinwheel, body
Process - Assembling
Output - Toy car | (4) Input - The factory which produces motor cars
Process - Issuing to the market
Output - Toy car |
02. At present, which step hasn't been taken to facilitate the transportation for avoiding the road traffic?
- | | |
|------------------------------------|----------------------------------|
| (1) Closed Circuit TV | (2) Automatic Teller Machine |
| (3) Parking Identification Placard | (4) Traffic Light Control System |
03. With the computer evolution, in third generationandwere used to input data and instructions and palmtop computers were used in generation.
- | | |
|---------------------------------|---|
| (1) Key board and mouse , first | (2) Touch screen and touch pad , fourth |
| (3) Key board and mouse , fifth | (4) Touch screen and touch pad , fifth |
04. What is the answer included only automatic computer systems?
- | |
|--|
| (1) Abacus, IBM 360 , UNIVAC LARC , IBM 701 |
| (2) Adding Machine, Punch card system, Abacus, Analytical Engine |
| (3) Difference Engine , EDSAC , EDVAC , IBM PC |
| (4) ENIAC , UNIVAC , PDP 11 , Apple 11 |
05. There are two types of computer memory, as primary memory and secondary memory. Consider the following statements regarding primary memory.
- A. Basic Input Output System Commands has been stored in ROM by the computer Data manufactures.
- B. Firstly, Necessary data available for processing CPU is checked in Cached memory.

What is the **correct** answer according to above statements?

- (1) Statement A is correct and statement B is incorrect.
- (2) Statement A is incorrect and statement B is correct.
- (3) Both statement A and B are correct.
- (4) Both statement A and B are incorrect.

06. What is the unit of measuring the speed of central processing unit at present?

- (1) Byte
- (2) Giga Hertz (GHz)
- (3) Terabyte (TB)
- (4) Nibble

07. The following chart shows statements regarding computer types in column A and its usages in column B.

A	B
(1) Super computers	A A number of users get connected to one computer using a number of terminals.
(2) Mainframe computers	B A few users get connected to computers through a few terminals
(3) Mini computers	C Expensive and rare, Used for complex functions
(4) Micro computers	D Used for personal usage.

What is the correct answer after matching computer types with its usage?

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

08. What is the correct answer naming following ports correctly?



A

B

C

D

- (1) A-Network port B-video port C-HDMI port D-parallel port
- (2) A-Network port B-parallel port C-HDMI port D-Video port
- (3) A-HDMI port B-parallel port C-Network port D-video port
- (4) A-HDMI port B- video port C-Network port D-parallel port

09. The following table shows several data transmission media in column A and events which those media used in column B.

A	B
(1) Microwave	A used to control wireless mouse
(2) Coaxial Cable	B transfer while reflecting light in modern telephone networks
(3) Fiber Optic	C Used in internet communication.
(4) Infrared	D Used for TV antenna to transfer data.

10. A storage device which read and write data by laser beam is,
 (1) Blu-ray disc (2) Floppy disc (3) Hard Disk (4) lash Pen

11. Several data transmission events are shown below.

A - Tharushi is listening to the radio.

B - Nimasha and Malindi is engaging in a telephone conversation.

C - Two policemen is engaging in a telephone conversation with a walkie-talkie machine.

What is the correct answer according to the above data transmission modes?

- (1) A - Simplex B - Half Duplex C - Full Duplex
 (2) A - Simplex B - Full Duplex C - Half Duplex
 (3) A - Full Duplex B - Simplex C - Half Duplex
 (4) A - Full Duplex B - Half Duplex C - Simplex

12. Several statements regarding devices which connect computer networks are shown below.

A. Hub can be used to connect two computer networks.

B. At present, Wi-Fi adapters are used to build a speed internet connection for mobile phones.

C. The translation of Analog signal to digital signal and digital signal to analog signal is converted by the modem.

What is the answer included only correct statements?

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

13. The following table shows the computer network topologies in column A and the specialties of using those topologies in column B

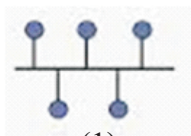
A	B
(1) Bus topology	A Connect computers through a main cable.
(2) Ring topology	B Connect computers by centralizing a switch or hub.
(3) Star topology	C It is costly and complex network connection.
(4) Mesh topology	D The breakdown of one computer can lead to the breakdown of the entire network.

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

14. Which security system can be installed as hardware and software for the secure of a computer system?

- (1) Antivirus software (2) Surge protector
 (3) Firewall (4) Closed circuit TV

15. What is the figure represented a tree topology?



(1)



(2)



(3)



(4)

16. What is the correct answer from the statements given bellow?

A - Data and commands in computers are stored as binary.

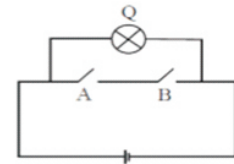
B - The number 326 is valued both decimal and binary number systems.

C - 310_8 is equant to 10001001_2 . Only A

- (1) Only A (2) Only B (3) Only A and C (4) All A, B and C1

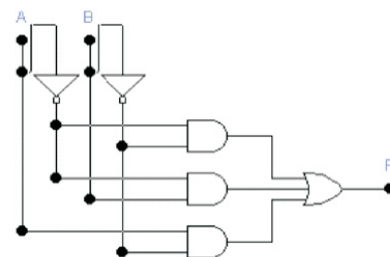
17. What is the octal equivalent of decimal number 159_{10} ?
 (1) 235_8 (2) 232_8 (3) 230_8 (4) 236_8
18. Which answer is represented the descending order of 10011001_2 , 115_8 , 160_{10} and $1C_{16}$ numbers?
 (1) 160_{10} , 10011001_2 , 115_8 , $1C_{16}$ (2) $1C_{16}$, 115_8 , 10011001_2 , 160_{10}
 (3) 10011001_2 , 115_8 , $1C_{16}$, 160_{10} (4) $1C_{16}$, 10011001_2 , 115_8 , 160_{10}
19. How many bits are used to represent the octal number 657 in binary formation?
 (1) 12 (2) 16 (3) 8 (4) 9
20. When representing ASCII value, the ASCII value of B is 1000010. What is the answer to represent characters A and H in ASCII values respectively?
 (1) 1011000 and 1000000 (2) 100000 and 1001000
 (3) 1001000 and 1000001 (4) 1010000 and 1001001
21. Saraka has got Rs.50/= from his father and Rs.25/= from his mother to buy a ball. What is the binary equivalent of the total price of he has got?
 (1) 10000100_2 (2) 1000011_2 (3) 1000101_2 (4) 1001011_2

22. What is the correct logic gate represent the operation of the logic circuit shown from below figure?



- (1) AND (2) NAND
 (3) NOR (4) OR

23. What is the logical expression which output by shown below circuit with gates?



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

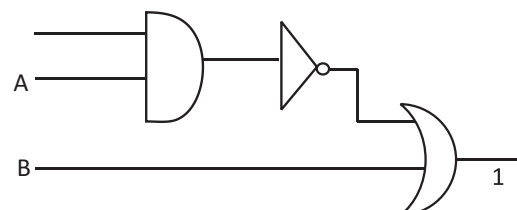
24. What is the gate that is included in the following truth table?

A	B	Q
0	0	1
0	1	0
1	0	0
1	1	0

- (1) OR
 (2) NOR
 (3) AND
 (4) NAND

25. What is the gate that the output of a logic gate is false(0), when only all inputs are true (1)?
 (1) AND gate (2) NAND gate (3) OR gate (4) NOR gate

26. Find the value that should give respectively for input A and B to be the output 0 in below logic circuit.



- (1) 0 and 1 (2) 1 and 1
 (3) 1 and 0 (4) 0 and 0

27. What is the answer included only system software?

- (1) Operating system, utility software, graphic software
 (2) Official software, operating system, language translators
 (3) Utility software, device drivers, operating system
 (4) Official software, graphic software, web browsers

Grade 10

INFORMATION & COMMUNICATION TECHNOLOGY - I - CONTINUATION

28. Consider the following statements regarding operating systems.
 A. It is a major software that gives the connection between user and hardware.
 B. All the devices which are connected to the computer, are managed.
 C. There are two interfaces as Graphical User Interface and Command Line Interface.
 Which is the answer that includes correct statements?
 (1) Only A and B. (2) Only A and C (3) Only B (4) All A, B and C
29. What is the answer when showing the task of the utility software, disk defragmentation and disk formatting respectively?
 (1) Deployment of the sectors relevant to store data and correct unsystematically storages in hard disk
 (2) Correct unsystematically storages in hard disk and deployment of the sectors relevant to store data.
 (3) Divided the hard disk into multiple drivers as C: D: and deployment of the sectors relevant to store data.
 (4) Control all data in the activation of the computer and deployment of the sectors relevant to store data.
30. What is the answer for A and B that shows regarding computer software to complete the following incomplete diagram?
 (1) Application software and utility software
 (2) Utility software and Hardware
 (3) Application software and hardware
 (4) Hardware and utility software
-
31. What is the answer that shows two software that can be done word processing through cloud computer concept?
 (1) Microsoft Word, Open Office Writer (2) Google docs, Office 365 Word
 (3) Operating System, Utility software (4) Microsoft word, Google docs
32. What is the answer of the formula $=12*2/6-3+1$, when it is inserted in an electronic spreadsheet cell?
 (1) 5 (2) 2 (3) 4 (4) 8

Imagine that this is a part of relational database of business information system which imported vehicles into Sri Lanka is shown below. This company imports vehicles monthly. Answer the questions from 33 to 35 regarding this.

CC_Code	CC_Value
A	660
B	1300
C	1500

Table 1 : engine Table





Vehicle_Name	Vehicle_Code	CC_Code
Susiuki WagonR	1001	A
Honda Vezel	1002	C
Susiuki Every	1003	A
Honda Fit	1004	B

Table 2 : Vehicle Table

Month	Vehicle_Code	Imported
January	1002	150
February	1001	225
January	1004	216
May	1003	161
April	1001	290
May	1002	225

Table 3 : Import Table

33. Which can be denote as a primary key in this database?
 (1) CC Code in engine table (2) Vehicle Name in Vehicle Table
 (3) Imported in Imported Table (4) CC Code in Vehicle Table
34. Tables can be joined by a foreign key easily. Which can be denotedas the foreign key in this data base?
 (1) CC Value in Engine table (2) Vehicle Name in Vehicle Table
 (3) Vehicle code in Import Table (4) CC Code in Engine Table
35. If 250 vehicles which from Honda Grace with CC Value 1496 engine capacity is imported, which tables should be updated to enter that data?
 (1) Engine Table and Import Table (2) Vehicle Table and Import Table
 (3) Vehicle Table and Engine Table (4) Engine Table, Vehicle table and Import Table
36. Consider the following statements regarding data base management.
 A. The ability to access at necessary times efficiently is a basic feature of manual data base system.
 B. A large number of data in a low space can be stored by using a electronic data base.
 C. Keeping the Data redundancy is difficult, if data redundancy has occurred in an electronic data base.
- The correct statements are
 (1) Only A and B (2) Only A and C (3) Only B and C (4) All A, B and C
37. The information on the commands and the tasking a presentation software is not given respectively. What is the letter and the number of the columns when they are shown respectively?

Command	Tasks
A  Zoom	1. A relative slide or link to a web page.
B  Hyperlink	2. An animation event.
C  Paste	3. Run the created presentation.
D  From Beginning	4. Copy a selected part in another area.

- (1) 1-B 2-D 3-C 4-A (2) 1-A 2-D 3-B 4-C
 (3) 1-D 2-A 3-C 4-B (4) 1-C 2-B 3-A 4-D
38. Several statements that should be included the features of a quality presentation are shown below.
 A. Enlarge the topics that should be highlighted.
 B. Point out spelling and grammar mistakes correctly.
 C. Present the facts in a detailed manner in each slide.
 Which statements are correct?
 (1) Only A and B (2) Only A and C (3) Only B and C (4) All A, B and C
39. Which is not a feature of electronic presentation than normal presentation?
 (1) Time management (2) not delaying subject matters
 (3) Can't get the attraction of the audience. (4) Can't present creatively.
40. Who has been taken the priority to establish the ICTA and UCSC institutions to develop the computer education in Sri Lanka?
 (1) Mr.Abhaya Induwara (2) Mr.V.K.Samaranayaka
 (3) Mr.Rathnajeewan Hool (4) Mr.Arther C.Cleak

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PROVINCIAL DEPARTMENT OF EDUCATION NORTH WESTERN PROVINCE

THIRD TERM TEST 2020

Grade 10 **INFORMATION & COMMUNICATION TECHNOLOGY - II** **One & Half Hours**

Name / Index No. : _____

- Answer Three (03) questions only, including first question and two others.

(01) (i) Consider the following note which includes the E-Government related applications and services performed for citizens.

- | | |
|---|--|
| A | Renewal of the license of the motor car owned by Ruchira. |
| B | Call 1919 and obtaining the services of government information centre |
| C | Downloading the government gazette notifications and circulars from internet |
| D | Mr.Nimsara obtain the application required for his promotion online. |

In the above-mentioned tasks, for which stakeholders are provided the services under the E-Government?

- (ii) Sandun went to the post office to pay the water and electricity bills of the house. After paying the bills he received a printed bill from the post office. He took it and gave it to his mother. When printing the bill, the cashier of the post office used some computer devices. Write
- (a) Two input devices
- (b) Two output devices
- (iii) Calculate the following sums related with number systems with relevant steps.
- (a) Convert the binary 101011_2 to its decimal equivalent.
- (b) Convert Hexa- decimal $A9_{16}$ to its binary equivalent.
- (iv) (a) Copy the following table and complete it with Most Significant Digit (MSD) and Least Significant Digit (LSD)

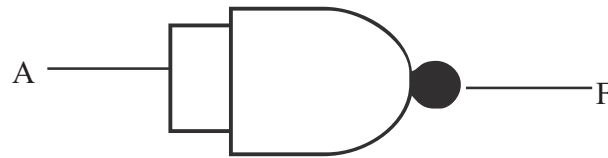
Number	Most Significant Digit (MSD)	Least Significant Digit (LSD)
3450		
0.0035		

(b) Convert the following Binary Coded Decimal Values (BCD) to its Decimal values.

(a) 100101110011_{BCD}

(b) 001110000011_{BCD}

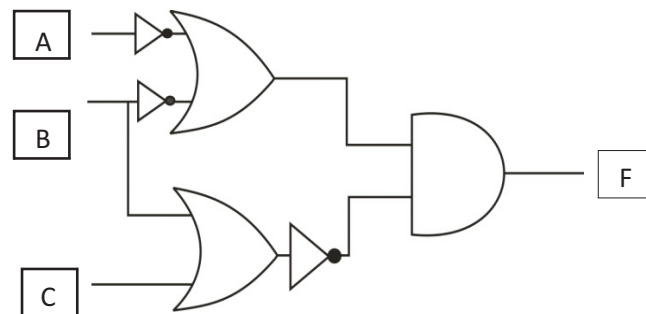
(v) Consider the following Logic gate.



Draw the Truth Table for this Gate .

(Use only two columns as A and F)

(a) Write the logical equation that gives the F output of the following Truth Table



(vi) Write down the letter and the number as a pair for the answer after matching the statements in column A and terms in column B .

A	B
P. Utility Software	Linux
Q. Managing Hardware	Microsoft Word
R. operating System with Graphical User Interface.	Disk Defragmentation
S. An Application Software.	Memory Management

(vii) Mention two advantages of working with a word processing software under Cloud Computer concept and name two Software that can be used.

(viii) Write down two disadvantages of Data Duplication in an Electronic Data Base.

(ix) Given below are some of the various data fields which are used in data bases. Copy this table in your answer sheet and enter the data types of the different fields respectively.

Field	Data Type
Subject Codes	
Medical fees	
Number of passengers	
Registered or not	

(x) Write down 2 demerits of the usage of Information & Communication Technology.

(02) (a) All school students as well as university students lost educational opportunities for a long period of time due to recent Covid-19 global epidemic. As a solution for this, Majority of teachers and students engaged in distant education using Information and Communication Technology.

- (i) What is Distant Education?
- (ii) Name two technical devices that you need to use Distant Education.
- (iii) Show two features of this education system.
- (iv) Mention in short, two advantages that you can experience by engaging in Distant Education.
- (v) Write two problems that you had to face when using Distant education.

(Marks 1x5=05)

(b) If the following statements are true put (✓) mark and false put (X) mark.

- (i) Gazette service through E-government is available to the citizens of that country. ()
- (ii) Contacting a specialist by talking on the phone to reserve a date and time is a part of Remote health care. ()
- (iii) Machine Language can be considered as a computer language of the first generation of computers. ()

(Marks 1x3=03)

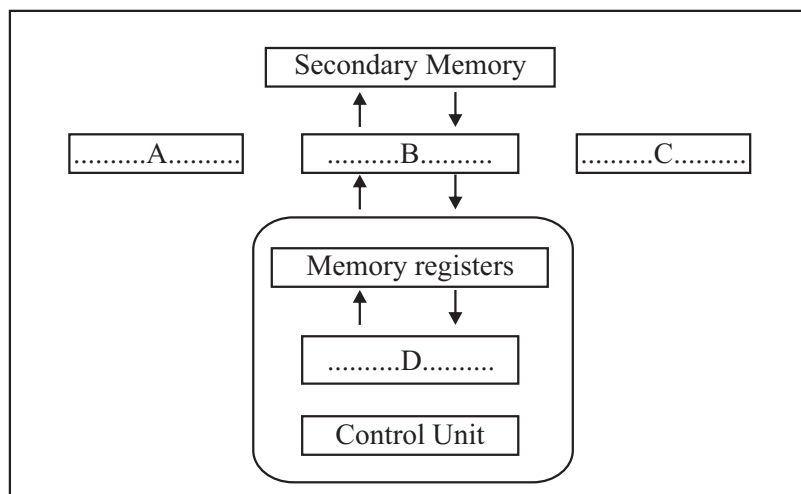
(c) Select the names from the given list which are relevant to the statements in part A in the following table and write in column B

	Part (A)	Part (B)
a	The first female programmer of the world	
b	The founder of world-famous Facebook	
c	Software used to draw house plans in the industrial sector	
d	A good solution to maintain proper temperature for crops	

(CAD / Mark Zuckerberg /Greenhouses/ Joseph Jacquard /Photoshop / Charles Babbage /Automated Water Supply/Ada Augusta Lovelace)

(Marks 0'5 X4=02)

(03) (a) The following diagram shows an overview of the flow of data and instructions on a computer system.



(03)

- (i) Name A, B, C, D parts of the diagram. (04 Marks)
- (ii) Copy this diagram in your answer sheet and indicate how commands/ control signals are issued with dotted lines. (02 Marks)
- (iii) Classify the following devices as input and outputs'

A Joy Stick

Input Devices

B projector

C plotter

Output Devices

D Optical Character Recognition

(02 Marks)

- (b) Select the word in brackets that is relevant to the blanks in the following paragraph.

There are evidences that information exchange existed since ancient time .At present, it is a common sight that data is exchanged through technological devices. Exchanging data and information is called as 1)(data communication / data transmission) and for that a data source ,data receiver and 2)..... (a process / a medium) are needed. When communicating data from one system to another system, transmitting data to one direction at a time is called as 3) (full duplex / half-duplex) mode and 4)

(walkie-talkies / landline telephones) use this method of data communication. (02 Marks)

- (04) (a) Having asked his mother for 1000 rupees, Tharaka went to PC – Network institution to buy some computer accessories. There, He bought a keyboard, a mouse and 20 LED bulbs.

Keyboard Rs.450₁₀

Mouse Rs. 556₈

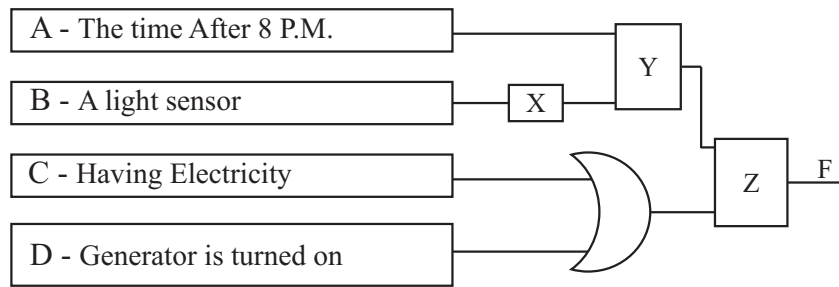
LEDBulb Rs. 111₂

- (i) How much did it cost Tharaka to buy all above accessories in decimal numbers? (01 Mark)
- (ii) After giving Rs.1000 to the shop owner, write the balance that Tharaka got in binary numbers. (02 Marks)
- (iii) Tharaka bought 06 more LED bulbs with the remaining money. Write the cost of all 26 bulbs that Tharaka bought in Octal form. (02 Marks)

- (b) An electric fence was erected to protect the people living in a village bordering the Yala sanctuary from wild animals. The electric fence is activated only after 8 P.M. or whenever the environment is dark if there is electricity or if the generator is turned on.

The input is 1 when the time is passed (after) 8 P.M. in the pre-arranged timer. Furthermore, When designing the circuit with gates, A light sensor which gives out the output value 1 only when there is light in the environment , A sensor which has the output value 1 when there is electricity and a sensor which produce the output value 1 when the generator is turned on have been used.

- (i) Name the gates suitable for X, Y, Z in the following circuit .



- (ii) Write the Boolean expression For “F” output using A, B, C, D in the above circuit with gates. (01 Mark)
- (iii) Draw the Truth Table for the Boolean expression $A \cdot (B + A)$ (02 Mark)

(05) Following are few tables related to a relational data base of a project management system of an organization.

NIC No.	Name	Pro managerid
887002513V	A.B. Silva	1001
901240225V	D.M. Aberathne	1002
811320216V	D.B. Samarasinghe	1003
782430128V	S. Ananda	1004

Table : Employee

Projected	Pro-managerid	Start Date
Pro001	1002	2017
Pro002	1001	2019
Pro003	1002	2020
Pro004	1003	2020

Project-Employee

Projected	Pro managerid	Start Date
Pro001	1001	2017
Pro002	1002	2019
Pro003	1003	2020
Pro004	1004	2020

Project-Employee

- (i) (a) What is the primary key that can be in the employee table (01 Mark)
- (b) What is the foreign key in projects table ? (01 Mark)
- (ii) What table/tables need to be updated to make the following changes
- (a) Recruitment of a new employee named S.K.Sandun (NICNo :836453458V) to the institution. (01 Mark)
- (b) Appoint employee S.K.Sandunas the project manager in project number 4 (Pro004) (01 Mark)
- (iii) To enter the new record to make the above
- (a) change in relevant tables. use the following format and write
Name of the table (field1, field 2,...)
(Note: Imagine employee number of S.K.Sandun is 1005)
- (iv) This organization appointed Mr. D.B. Samarasinghe as the project manager of the Housing project (Prd005) started in 2020 . To enter the new record to make the changes in relevant tables . use the following format and write
Name of the table (field1, field 2,...)
- (v) What tables should be used to write a query to find the name of the manager of Colombo harbor project? (02 Marks)