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Provincial Department of Education - NWP

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80 | E | I

First Term Test - Grade 10 - 2020

පළමු වාර පරීක්ෂණය - 10 ශ්‍රේණිය - 2020

Name/Index No:- ..... **Information and Communication Technology - I** **Time:- 01 hour**

- **Answer all the questions.**

(1) Select the statement that best describes ICT

1. A technique used to communicate processed information.
2. A technology used to process and convert data
3. Processing and sharing information.
4. The technology used to process and convert data into information, store and share it.

(2) Crop cultivation, animal husbandry and fisheries can be introduced as the applications of information technology in agriculture. The machines that are only used for planting crops are ;

A. Meteorological Devices
B. Radio Frequency Identification Device (RFID)
C. Automated Insect Control Devices

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

(3) The following are some of the features of a learning management system that are available to different sectors of education.

A. Assignments can be uploaded at home
B. Ability to update school information
C. Ability to respond to issues in discussion forums

The answer which gives the above facilities to the students, teachers and administrators respectively is,

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

(4) In the field of education, choose the answer that includes only the websites where a student can study online.

1. www.schoolnet.lk, www.facebook.com, www.bbc.com
2. www.e-thaksalawa.moe.gov.lk, www.vidumanpetha.lk, www.schoolnet.lk
3. www.ebay.com www.schoolnet.lk, www.amazon.com,
4. www.schoolnet.lk, www.webpatashala.com, www.cnn.com

(5) The sailors of a particular ship have informed a hospital that some passengers on the ship show the symptoms of corona virus. Hospital staff decided to treat them using distant health treatment. What is the special feature of distant health treatment mentioned in above situation.

1. Home health medicine
2. Remote Surgery
3. Emergency Telemedicine
4. Medical Teletraining

NWP EXAM

(6) The application of ICT has made human tasks much easier and misuse of ICT can bring undesirable effects not only for you but for the entire society. One of the consequences is addiction. The physical inconvenience of this is,

A. Sore eyes
B. Back pain
C. Headache

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

(7) In which generation of computers was the keyboard and mouse used to input data?

1. First Generation Computers
2. Second Generation Computers
3. Third Generation Computers
4. Fourth Generation Computers

(8) following are some statements regarding the changes that took place in the evolution of the computer from the first generation to the fifth generation

A. The size of the computer and the cost of electricity were reduced.
B. Speed and storage capacity decreased.
C. Increasing the use and being a multipurpose equipment.

Which of these statements is true?

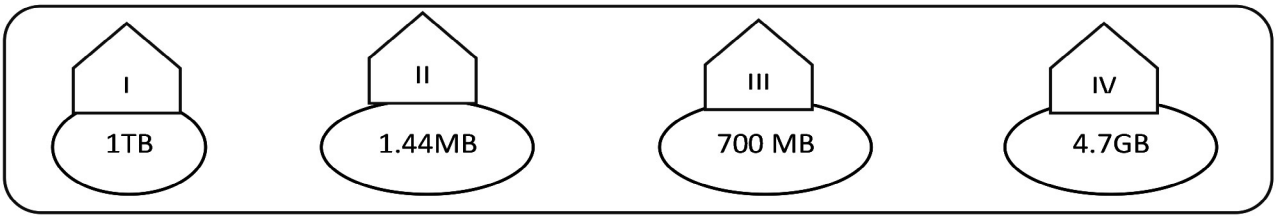
1. A only 2. A and B only 3. A and C only 4. all A, B and C

(9) The first computer developed by Joseph Jacquard as an input, output, and storage device, using the punch card system is,

1. Pascaline 2. Analytical Engine 3. Difference Engine 4. ENIAC

(10) Select the answer which compare the letters relevant to the following devices used in the computer and the numbers relevant to the capacities shown in the box given.

A. floppy disks B. Compact Disk C. Hard Disk D. Digital Versatile Disk



1. A → II , B → IV, C → III, D → I
2. A → II , B → III, C → I, D → IV
3. A → I, B → IV, C → III, D → II
4. A → IV B → III, C → II, D → I

(11) When Pradeep was asked a question by the teacher to name some of the devices that could do both input and output, the answers he gave were as follows:

A . Touch Pad B. Touch Screen
C. Digital Camera D. Web Camera

What is the statement which has correct answers?

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

NWP EXAM

(12) If you want to scan and computerize the number of documents printed in English in the school office within a very short period of time, the input device is to use is,

1. OCR 2. OMR 3. MICR 4. Flatbed Scanners

(13) The Devices listed in column A of the following table are connected to a computer with the ports shown in column B. what is the answer which correctly matches the column A and B

Column A	Column B
P Multimedia Projector	1 USB Port
Q Printer	2 Serial Port
R Modem	3 HDMI Port
S Mouse	4 parallel port

1. P-3, Q-4, R-1, S-2 2. P-3, Q-1, R-2, S-4 3. P-3, Q-4, R-2, S-1 4. P-3, Q-1, R-4, S-2

(14) The answer, which includes non-impact printers, is:

A. Dot Matrix printer B. Thermal printer C. Laser printer D. Line Printer

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

(15) Sanjeewa removed the cathode Ray Tube monitor CRT monitor from his computer and attached a Liquid Crystal Display (LCD monitor). Here are some of the reasons:

A. Needing little space
B. Increase in durability
C. Low usage of electricity

The true statement/statements is/are:

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

(16) The use of transistors for data processing and the emergence of the operating system are two important milestones in computer evolution. Which answer respectively denote that two generations of software evolution?

1. second generation and third generation
2. first generation and third generation
3. First generation and Fourth generation
4. Second generation and Fourth generation

(17) The following are some of the unique features of a computer caused for computerizing an institution which does its office work manually.

Which is the correct statement out of them?

1. Speed, accuracy, efficiency, intelligence
2. Save ability, intelligence, versatility, efficiency
3. Speed, save ability, intelligence, accuracy
4. speed, accuracy, save ability, versatility

(18) When processing data in a computer, the data provided by ..... A ..... is temporarily retained in …….B……and later they are computed by …….C….. in the Central Processing Unit ..... The computed data is retrieved from the main memory through the memory of the registry and output. The answer which includes the labels respectively to suit the A,B,C places is:

1. Control unit, main memory, input devices
2. Main memory, input devices, arithmetic and logical unit
3. Input devices, main memory, arithmetic and logical unit
4. Output devices, main memory, arithmetic and logical unit

NWP EXAM

(19) Consider the following statements about devices that store data on a computer

1. Hard disk is a device made using magnetic technology.
2. Solid state devices are very popular today.
3. A Compact Disk can store more data than a hard drive.

Which one of these statements is true?

1. A only
2. A and B only
3. A and Conly
4. all A, B and C

(20) Shantha who, went to a computer store bought a printer, scanner, keyboard and monitor. Out of them,…A.... is an output device and ….B…….. was an input device.

Devices suitable for A and B are:

1. Monitor and printer
2. Printer and keyboard
3. Scanner and Keyboard
4. Printer and monitor

(21) In a class group activity, Sahan and the team were assigned to distinguish information from a list of data and information. Following are some statements that they have understood as information. What are the information they have identified accurately?

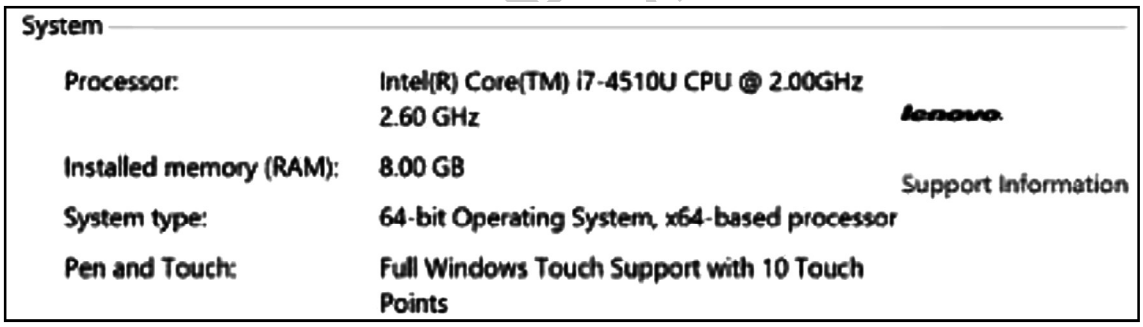
A. Monthly electricity bill

B . Mass of each student in grade 10

C. 2019 lowest rainfall is recorded from Puttalam

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

(22)



The above diagram shows a set of system information on a particular computer. According to that information, which answer correctly specifies the clock speed of the computer and the capacity of Random Access Memory.

1. 2.00 GHz - 2.6 GHz, 64bit
2. i7-4510U , 8GB
3. 2.00 GHz - 2.6 GHz , 8GB
4. 2.00 GHz , 2.6 GHz

(23) Consider the following statements about data transmission.

A. Data transmission between the system unit and the printer is in simplex mode.

B. Half-duplex data transmission is faster than Full duplex data transmission.

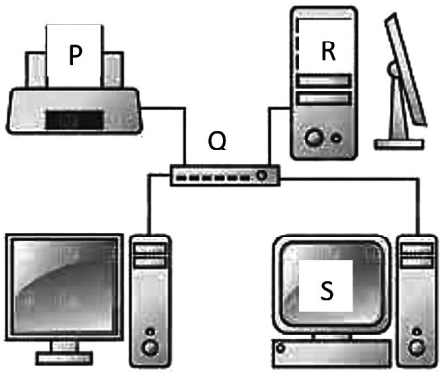
C. Transmitting data in only one direction at a time is Half duplex data transmission.

Of these statements, the true statement /statements is/are:

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

NP EXAM

(24) When the devices In the following diagram, are named as P,Q,R,S respectively the answer is:



1. Printer, switch, server computer, client computer
2. Printer, router, client computer, server computer
3. Router, switch, client computer, server computer
4. Router, switch, server computer, client computer

(25) Which of the following is not an advantage of computer networking?

1. Ability to share resources'
2. Ability to communicate between computers.
3. Increse the cost while using the Internet
4. Easy to share files.

(26) After a study of the topology used in computer networking, Saman chose star-type network topology to network computers at his place of business. Following may be few reasons for that decision.

A. Ability to control central device
B. even if one computer is out of order, No failure in the network
C. connectivity from one computer to all the other computers through wires

What is / are the true statement/statements of them?

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

(27) The Port used to connect a computer with the Network Interface Card is;

1. PS/2 Port 2. USB Port 3. RJ/45 Port 4. VGA Port

(28) Find the answer that matches the below statements about the types of computers and the types of computers mentioned in the column

A. It is used to process data in institutions such as banks and insurance companies.
B. It is a large computer with very powerful data processing speed.
C. It is commonly used for day today activities.

P	Super Computers
Q	Micro Computers
R	Mini Computers

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

(29) Which of the following devices is not used to network computers?

1. Switch 2. Server computer 3. Printer 4. Hub

(30) Which of the following numbers is an octal number?

1. A675 2. 563 3. 987 4. EF12

NWPEXAM

(31) What is the decimal equivalent to binary 101101_2

1. 40_{10} 2. 45_{10} 3. 36_{10} 4. 52_{10}

(32) What is the answer when 10111 + 11011 is calculated?

1. 100010_2 2. 110010_2 3. 111011_2 4. 101111_2

(33) Which of the following numbers is equivalent to decimal 120_{10}

1. 1111000_2 2 160_8 3. 76_{16} 4. 101111_2

(34) What is the decimal equivalent to binary 101011_2

1. 42_{10} 2. 39_{10} 3. 44_{10} 4. 43_{10}

(35). Which of the following numbers has minimum value?

1. 101101_2 2. 36_8 3. $2F_{16}$ 4. 45_{10}

(36) what is the Least Significant Bit (LSB) and Most Significant Bit (MSB) respectively of the number 001.10001

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

(37) The Octal equivalent of Hexa decimal $7A_{16}$ is;

1. 1111010_2 2. 172_8 3. 124_{10} 4. 74_8

(38) Which answer represents the ascending order of these four numbers 100011_2, 54_{10}, 76_8, $2F_{16}$?

1. $2F_{16}, 7_8, 100011_2, 54$ 2. $100011_2, 76_8, 2F_{16}, 54$
3. $54, 2F_{16}, 100011_2, 76_8$ 4. $100011_2, 2F_{16}, 54, 76_8$

(39) What is the largest of the following BCD (Binary Coded Decimal) values?

1. 01000101 2. 10010001
3. 00110100 4. 10011001

(40) If character 'c' is represented in the ASCII code system as 1100011, which of the following answers represents character 'f'?

1. 1110100 2. 1100110 3. 1101011 4. 1101011

NWP EXAM

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80 | E | II

First Term Test - Grade 10 - 2020

පළමු වාර පරීක්ෂණය - 10 ශ්‍රේණිය - 2020

Name/Index No:- .....

Information and Communication Technology - II

Time:- 2 hours

- **Answer all together five questions includinag the first question and another four questions.**

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(1) (i) Columns" A" and" B" below illustrate the applications and uses of ICT respectively. Match the applications in column "A "with the examples in column "B" and write the corresponding pair of characters.

A		B	
i	Health Sector	a	Getting aid of LMS
ii	Agricultural Sector	b	Use of EEG machine
iii	Education field	c	Use of RFID signals
iv	Transport Sector	d	Use of ETC (Electronic Toll Collection)

(ii) Convert the hexadecimal D6B to its binary equivalent . Write down the steps.

(iii) Different storage devices have different capacities. Set the storage devices below in order of the increasing capacity. (It is sufficient to mention only the relevant character.)

(a) Flash Memory
(b) Cache Memory
(c) Magnetic Tape
(d) Register Memory

(iv) a) Name a storage medium used to store additional data on a mobile phone.

b) Write a commonly used device to backup data and information on server computers.

(v) Categorize and write down the following printers as impact printers and non-impact printers.

(a) Line Printer
(b) Inkjet Printer
(c) Thermal Printer
(d) Dot Matrix Printer

(vi) Write down whether following statements on data communication labelled (a)-(d) are True or False. (in your answer write only the statement label and True or False status)

a) Router is used to create a very fast computer network connection.
b) Infrared data transmission media is used to connect wireless key boards and mouse.
c) Switch is an example for a half-duplex data transmission mode.
d) Metropolitan Area Network (MAN) is a computer network that connect computers inside a room or several rooms in a building.

(vii) The capacity of a portable storage device is 2^{30} bytes. Write down its capacity in GB.

(viii) If the decimal representation for letter "K" in the ASCII table is 75, write the binary representation of the word '**OR**' by 7 bits per each character.

NWP EXAM

(ix) Write two changes in the evolution of the computer from the first generation to the fifth generation.

(x) The letters A to D in the following table below depicts the processes performed by different devices. The ports that connect those devices to the computer are shown by letters P to S. Match the processes and ports and write down in the correct order.

	Process		Device
A	Connecting an external hard disk to a computer	**P**	HDMI
B	Connecting a multimedia projector	**Q**	RJ/45
C	Connecting an old mouse	**R**	USB
D	Connecting a computer to a switch	**S**	PS/2

(Marks - 2 x 10 = 20)

(2) a) Consider the following statements related to the characteristics of quality of information. Select the characteristic that each of those statement reflects from the given list in brackets. Match and write only the statement number and the characteristic.

1. A fisherman usually listens to the daily weather report.
2. When a telephone number of a company is needed, go to the institution itself and get it.
3. When recruiting graphic editors to a graphic editing company, following a graphic editing course is sufficient.
4. The teacher in charge of grade 11 says it is difficult to make a successful analysis of the achievement of Grade 11 as five students did not sit for the exam.

(Completeness, Accuracy, Relevancy, Timeliness, Cost Effectiveness) (4 marks)

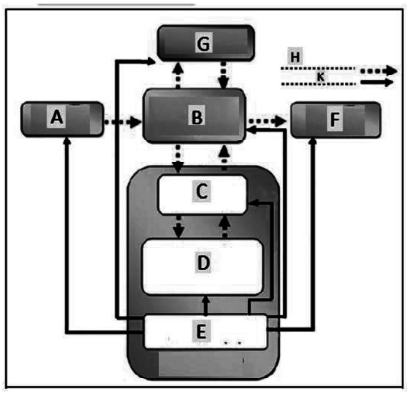
b) (i) Write down two services offered by e-government to other governments. (2 marks)

(ii) Information and Communication Technology has created some opportunities to get a little relief for the people who are living a very busy and restless life today. Name two such opportunities. (2 marks)

(iii) Mr. Nawaratne is going to Fort Railway Station, Colombo and gives money to get two second class tickets to travel to Rambukkana. The ticketing officer checks the money and notes down the destination and the date and issues the ticket. Separate and write down the input, process, output that represented in this situation. (2 marks)

(3) In 1945 John von Neumann, an American mathematician, presented the concept of the structural form of computer architecture.

John von Neumann
1903 – 1957



Using this model, the functionality of the computer is described below. Select the words in brackets that correspond to the numbers in the blanks.

NWP EXAM

a) (i) Data and instructions input by the ……(1)…….. are sent to ……(2)…… first.

(ii) That data is sent to the ……(3)…….. for the processing. It consists of three parts called ……(4)……., ……(5)…… and memory registers.

(iii) Data and instructions processed by the ……(3)……., are sent to the ……(2)…….. as information.

(iv) In here information is output by the ……(6)……

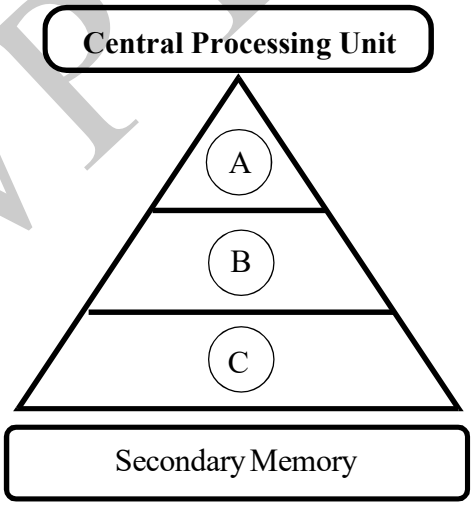
(v) Also .....(7)..... can be used to store information.

(vi) ……(5)…… communicates, handles and controls the hardware connected to the computer.

{Control Unit, Output Devices, Primary Memory, Input Devices, Central Processing Unit, Secondary Memory, Arithmetic and Logical Unit}

$(0.5 \times 7 = 3.5$ marks)

b) The figure below shows how primary memories are established in terms of proximity and capacity to the central processing unit



(i) writes the primary memories shown by A to C in order. (3 Marks)

(ii) Mention two technologies that form secondary memory. Write a relevant example for each technology. (2 Marks)

(iii) Convert 2^{10} kilobytes into bytes and write down. (1.5 Marks)

(4) Saranga who had passed the GCE A / L examination this year saw the following instructions when filling out the online admission form to enter to a university. Answer the following questions associated with the situation.

(i) within e- government concept in this incident, with whom the government is communicating information? (1 Mark)

(ii) If he uses calculator software installed in his computer to calculate the age as at the last date of application, on which device in the computer do those calculations take place? (2 Marks)

NWPEXAM

(iii) A soft copy of the identity card should be included in the form. What is the most appropriate input device to include a soft copy of the identity card in the form (2 Marks)

(iv) He first stored a photocopy of the identity card and the electricity ran out while filling out the form online. When the power came back on, the computer had only a photo of the identity card but no electronic form. What can be the reason for this according to the clasifications of computer memory? (2 Marks)

(v) The final instructions were to mail a copy to the Commission with the help of a laser printer. What is the reason for choosing this printer? In addition, mention two common features found in this group of printers. (3 Marks)

(5) Librarian of Malpitiya public library intends to obtain several new computers for staff and public use in order to provide an efficient service to the public. She hopes to network the computers and printers with the appropriate network topology

(i) Suppose the computers of the Malpitiya Public Library were handed over to you for networking. Draw a diagram of a star network, connecting a switch, three computers, and a printer. (Use the labels Switch, Computer 1, Computer 2, Computer 3, and Printer) (3 Marks)

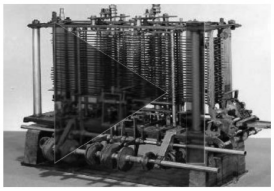
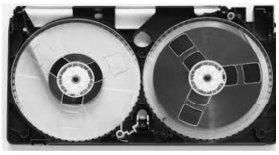
(ii) If hub was replaced with the switch for the above network, write down two disadvantages of the computer network (2 Marks)

(iii) Write down one disadvantage of using ring topology instead of star topology in the above library.(1 Marks)

(iv) Write down two advantages that the Malpitiya Public Library can obtain by networking rather than using computers and devices in isolation. (2 Marks)

(v) Radio Transmission is currently used as a very popular data transmission medium. Write down two instances of using radio transmissions in everyday life. (2 Marks)

(6) At the end of the first term, Pathum was given an online assignment by his ICT teacher under the heading "Computer Evolution". The following is an extract of that assignment.

A	B	C	D
			
A device used in the past for calculation purposes	Designed by Charles Babbage with the basic concept of computer.	The efficiency of the computer increased with the invention of this device	A device used to store 3rd generations of data

(Transistor, Analytical Engine, Abacus, Magnetic Tape)

(i) Read the clues under the images above and select the relevant device name for that image from the list given above in brackets and write (in your answer write the English letter and the device name.)

(2 Marks)

(ii) With the invention of the device introduced in the letter C, computers designed by using those devices were said to be more efficient. To which computer generation do these computers belong? Write two more features that can be seen on computers of that generation. (3 Marks)

(iii) Write down with the given letter whether the following statements about computer evolution are true or false.

NWP EXAM

A. Punch cards were used in first generation computers to input and output data. ( )

B. The use of the Internet for the first time began with the arrival of the second generation computers. ( )

C. The speed of data processing on Very Large Scale Integrated Circuits is slower than the speed at which Ultra Large Scale Integration are processed. ( )

D. One of the main reasons Charles Babbage became the father of computers was the introduction of the punch card system. ( )

E. Howard Aiken invented the world's first digital calculator, the Mark 1. ( )

(5 Marks)

(07) (i) Write down the number systems from the binary, octal and decimal to which each of the following numbers may belong.

	Number	Number System
A.	23	……
B.	845	……

(0.5 × 2=1 Marks)

(ii) Write the Most Significant Number(MSD) and the Least Significant Number(LSD) of the following numbers.

A. 7820 B. 50.320 (0.5 × 2=1 Marks)

(iii) Nimantha was getting ready to attend school in the morning and his mother gave him Rs. 100.He went to the school canteen with the money and bought a parcel of String hoppers for Rs.36_8 and a bottle of yogurt for Rs.110010_2

A. Write the amount given to Nimantha by his mother as a binary number (1 Marks)

B. Specify the amount to be paid for a string hopper parcel as a hexadecimal number. (2 Marks)

C. After purchasing string hoppers and a bottle of yogurt, write down the remainder paid by the canteen owner to Nimantha as a decimal number. (2 Marks)

(iv) Complete the following table with information about the coding system used to represent the data on the computer

Coding system	The number of bits used to represent a symbol/ character	Number of characters to be represented
BCD	……	……
ASCII	……	……
EBCDIC	……	……
Unicode	……	……

(0.5 x 4=2 Marks)

(v) Write down with steps how the number 53 is represented by Binary Coded Decimal (BCD)

NWP EXAM