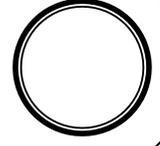




யா/ ஹாட்லி கல்லூரி, பருத்தித்துறை.
J/ Hartley College, Point Pedro



முதலாம் தவணைப் பரீட்சை - 2020

First Term Examination - 2020

தகவல் தொடர்பாடல் தொழினுட்பவியல் I, II
Information & Communication Technology I, II

80

E

I, II

மூன்று மணித்தியாலம்
Three Hours

Grade 10

Information & Communication Technology I

* Answer all questions.

* In each of questions 1 to 40, pick one the alternatives (1), (2), (3), (4) which you consider as correct or most appropriate.

- The numbers, words, images and symbols which do not bear a meaning, when standing alone are called as
(1) Data (2) Information (3) System (4) Computer
- Who is the father of computing ?
(1) Blaise Pascal (2) Joseph Jacquard (3) Charles Babbage (4) Howard Aiken
- What was the world's first ever mathematical machine invented by Blaise Pascal ?
(1) Abacus (2) Adding Machine (3) Analytical Engine (4) MARK I
- Which generation had used integrated circuits as the major hardware technology ?
(1) First Generation Computers (2) Second Generation Computers
(3) Third Generation Computers (4) Fourth Generation Computers
- Which of the following characteristic increased with the generation of computers ?
(1) Heat generation (2) Size
(3) Efficiency (4) Power consumption
- "After scanning this via smart phone and connecting to the internet, further information can be obtained from the website of the relevant item". Which coding system is used to get the mentioned facility ?
(1) ASCII (2) ISBN (3) Barcode (4) QR Code
- What is the official learning management system of the general education system in Sri Lanka which is being carried out by the Information Communication Technology branch of the Ministry of Education, Sri Lanka ?
(1) www.edupub.gov.lk (2) www.e-thaksalawa.moe.gov.lk
(3) www.doenets.lk/exam (4) www.nie.lk

8. What machine is in use to capture three dimensional (3D) images of different parts of body separately ?
- (1) CAT - Computerized Axial Tomography Machine
 - (2) MRI - Magnetic Resonance Imaging Machine
 - (3) ECG - Electrocardiogram Machine
 - (4) Cardiac Screening Machine
9. What can be the best solution to protect crops from natural disasters such as too much sun shine, rain, heat, cold, pests, and epidemics ?
- (1) Meteorological devices
 - (2) Automatic weed remover
 - (3) Drip irrigation
 - (4) Greenhouse
10. What type of computers are being used for scientific and engineering functions and to solve complex mathematical problems in huge organizations such as NASA ?
- (1) Mainframe Computers
 - (2) Super Computers
 - (3) Personal Computers
 - (4) Mini Computers
11. Which of the following is the example for hybrid computer ?
- (1) Speedometers
 - (2) Road lamps with sensors
 - (3) Meteorological machines
 - (4) ECG machines
12. Which of the following is **not** the pointing device ?
- (1) Mouse
 - (2) Joy Stick
 - (3) Keyboard
 - (4) Light pen
13. Which scanner is used in banks to verify cheques ?
- (1) Bar Code Reader
 - (2) Magnetic Ink Character Reader
 - (3) Optical Character Recognition
 - (4) Automated Teller Machine
14. Consider the following printers :
- (A) Dot Matrix Printer (B) Line Printer (C) Thermal Printer
- Which of the above is/are impact printer/printers ?
- (1) A only
 - (2) C only
 - (3) A and B only
 - (4) All A, B and C
15. Which instrument is commonly used in computer based planning (architectural designs, town planning) ?
- (1) Bubble Printer
 - (2) Laser Printer
 - (3) Thermal Printer
 - (4) Plotter
16. Which unit is used to measure the clock speed of computer ?
- (1) H
 - (2) GHz
 - (3) ms^{-1}
 - (4) Kmh^{-1}
17. What is the expansion of **RAM**?
- (1) Read And Memory
 - (2) Read Access Memory
 - (3) Random Access Memory
 - (4) Random And Memory

18. Consider the following secondary memory/storage devices :

- (A) Hard Disk (B) Compact Disc (C) Floppy Disk

Which of the above is/are **not** the magnetic media device/devices ?

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

19. What is the capacity of Digital Versatile Disc ?

- (1) 4.7 – 9.4 GB (2) 25 – 128 GB (3) 250 GB – 4 TB (4) 650 – 900 MB

20. Which device is connected in parallel port ?

- (1) Keyboard (2) Computer Monitor (3) Modem (4) Printers

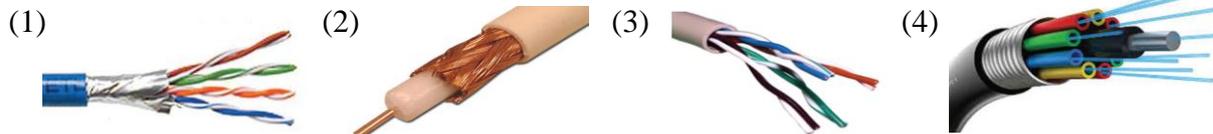
21. Consider the following :

- (A) Walkie - Talkie (B) Fax (C) Hub

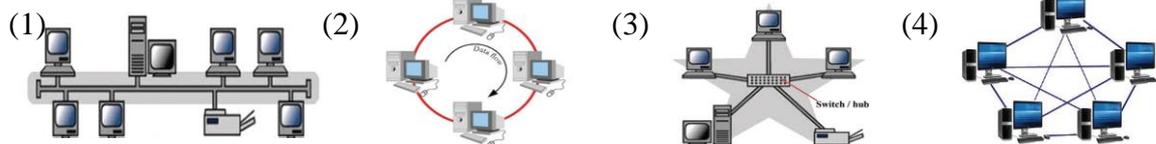
Which of the above is/are example/examples of half duplex mode ?

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

22. What diagram depicts the Fiber Optics Cable ?



23. What diagram shows the Bus topology ?



24. Consider the number “ 1010_x ” where ‘x’ is the base of the number system.

- (A) 2 (B) 8 (C) 10 (D) 16

Which of the above base value/values is/are suitable for base x ?

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

25. Which of the following number is wrong ?

- (1) 438_8 (2) 201_{10} (3) $ABCD_{16}$ (4) 1011_{10}

26. Which of the corresponding pair of numbers denotes the Most Significant Digit (MSD) and Least Significant Digit (LSD) of the number 0250 respectively ?

- (1) 0, 0 (2) 0, 5 (3) 2, 0 (4) 2, 5

27. Which of the corresponding pair of numbers denotes the Most Significant Bit (MSB) and Least Significant Bit (LSB) of the number 011010_2 respectively ?

- (1) $0 (=2^5)$, $0 (=2^0)$ (2) $0 (=2^5)$, $1 (=2^1)$ (3) $1 (=2^4)$, $0 (=2^0)$ (4) $1 (=2^4)$, $1 (=2^1)$



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I, II

Grade 10

Information & Communication Technology II

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

* First question carries 20 marks and each of the other questions carries 10 marks.

1.

(i) Information and Communication Technology has been playing a vital role in the universe. Today, you could hardly come across the person or a place that doesn't use information and communication technology in day-to-day activities.

Write down **four** applications of the Information and Communication Technology.

(ii) Write down **four** characteristics of quality information.

(iii) List out the major components of hardware technology that were used in 1st, 2nd, 3rd, 4th & 5th generation computers.

(iv) Name **three** classifications of computers based on the technology used to operate them.

(v) The interfaces which connect computer with its devices or with other computers are called Ports, Name **four** of them.

(vi) What are the **three** main classifications of computer network ?

(vii) Network topology is the pattern of connection in designing computer network. List down the **five** categorization of them.

(viii)

(a) By which number system the data that we are entering will be identified by the computer. Write down the numbers that are used in that method.

(b) How was this **2020.0325** decimal number formed ?

Point out the weighting factors of the formation.

(ix)

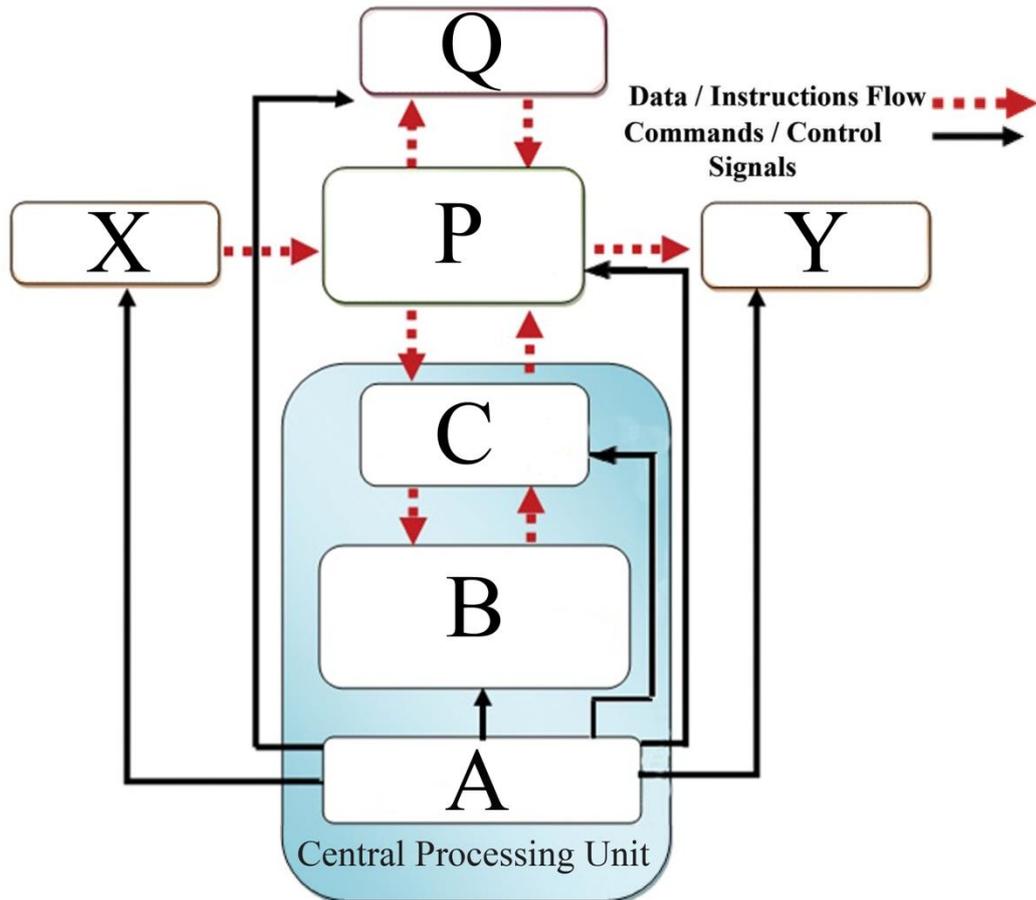
(a) Convert the decimal number **2020** to the equivalent binary number.

(b) Convert the binary number **110111010₂** to the equivalent decimal number

(x) Copy of the following table to your answer script and fill in the blanks.

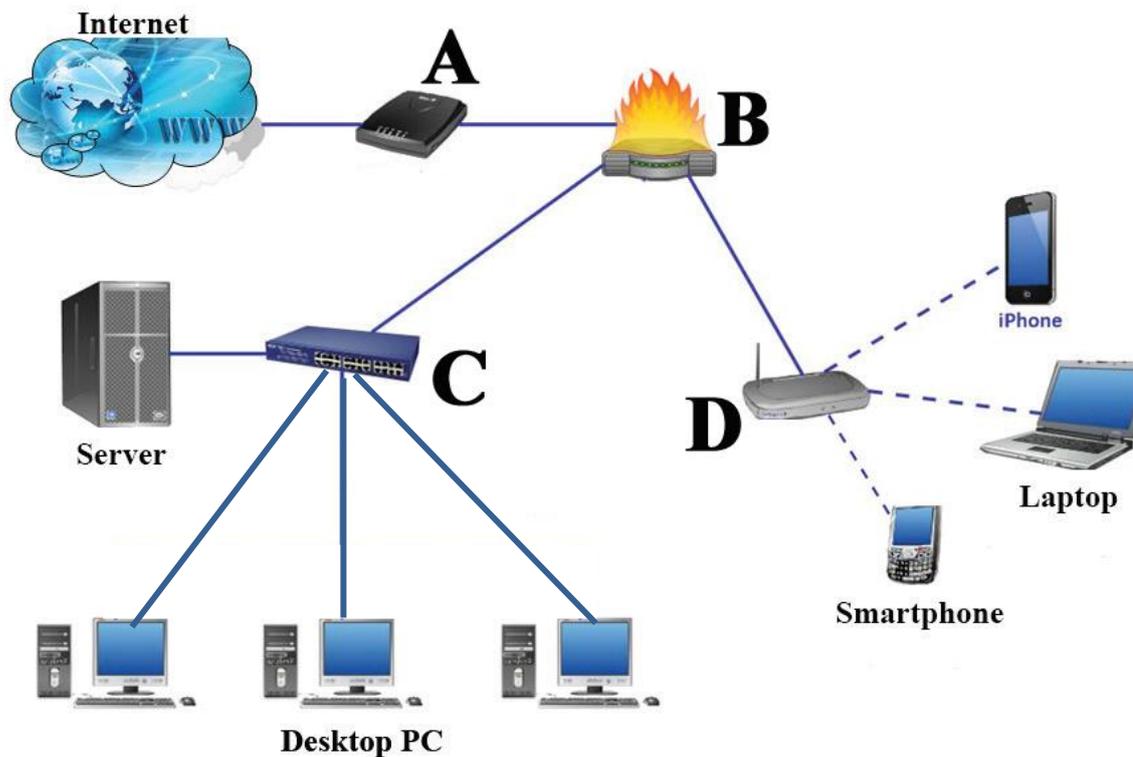
Coding systems	Number of Bits used	Number of Characters which can be represented
BCD - Binary Coded Decimal		
ASCII - American Standard Code for Information Interchange Code		
EBCDIC - Extended Binary Coded Decimal Interchange Code		
Unicode		

2. Imagine, the following diagram depicts the functions of the computer system's structure.



- (i) Name **A**, **B**, **C**, **P**, **Q**, **X**, and **Y**.
 - (ii) Provide **three** examples for each **X** and **Y**.
 - (iii) Mention the key functions of **A**, **B** and **C**.
 - (iv) Write down the **three** classifications of **P**.
 - (v) List out the **three** categorizations of **Q** and give an example for each.
3. Transmission of data and information is called data communication. Data transmission can be carried out between two or more computers or devices such as printers.
- (i) Name **three** basic components required for data communication.
 - (ii) Write **three** modes of data transmission. Give an example for each.
 - (iii) State **two** classifications of data transmission media. Provide **two** examples for each.
 - (iv) Define the terminology Half - Duplex Mode.
 - (v) Provide **two** circumstances in which Infrared is used for data transmission.

4. Imagine that the below diagram shows the computer network.



- (i) Name **A**, **B**, **C** and **D**.
- (ii) Write down the definition of Firewall.
- (iii) Explain Modulation and Demodulation.
- (iv) Mention **two** differences between Switch and Hub.
- (v) List out **two** advantages and disadvantages of Networking.

5.

- (i) Explain Data and the Information, give an example for each.
- (ii) Name the components of a system and write brief explanation.
- (iii) Provide **four** features of a computer.
- (iv) Differentiate Impact Printers and Non-Impact Printers by giving **two** different characteristics.
- (v)
 - (a) Convert the binary number 10000001111_2 to the equivalent octal number.
 - (b) Convert the octal number 356_8 to the equivalent binary number.
 - (c) Convert the binary number 1010101111001101_2 to the equivalent hexa-decimal number.
 - (d) Convert the hexa-decimal number $10ABCDE_{16}$ to the equivalent binary number.

6.

(i)

(a) Find the most significant digit (MSD) and the least significant digit (LSD) of the number **0.020200**

(b) Find the most significant bit (MSB) and the least significant bit (LSB) of the number **01010.11010₂**

(ii)

(a) Convert the decimal number **2020** to the equivalent octal number.
Show the relevant steps.

(b) Convert the octal number **273₈** to the equivalent decimal number.
Show the relevant steps.

(iii)

(a) Convert the decimal number **1196** to the equivalent hexa-decimal number.
Show the relevant steps.

(b) Convert the hexa-decimal number **2BE₁₆** to the equivalent decimal number.
Show the relevant steps.

(iv) Convert the octal number **2057₈** to the equivalent hexa-decimal number.
Show the relevant steps.

(v) Convert the hexa-decimal number **14FD₁₆** to the equivalent octal number.
Show the relevant steps.

7. Information Communication Technology leverages the human lives and it has become a recent phenomenon.

Briefly explain the contribution of Information Communication Technology in the following fields.

(i) Applications in the field of Education.

(ii) ICT in Health Sector.

(iii) ICT in Agricultural Industry.

(iv) ICT in Manufacturing Industry and Business.

(v) ICT in Transport.