

ශ්‍රී ජයවර්ධනපුර අධ්‍යාපන කලාපය  
Sri Jayawardanapura Education Zone  
දෙවන වාර විභාගය- 2023 නොවැම්බර්  
Second Term Test Examination – 2023  
Grade 10 –Paper 1

Information and Communication Technology

One hour

01. What is 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

02. Select the correct statement from the following?

1. The numbers, words, images and symbols which do not bear a meaning, when standing alone are called data
2. Information is made by processing data
3. We can use data to make decisions
4. Marks of students for the first term test can be considered as data

03. What is true among the following?

- A. Submitting data for processing is called "Input" and the result we get after processing is called "Output."
- B. Storing data is not an important task in information system
- C. Both input and stored data can be used to create information
1. A only    2. A and C only    3. A and B only    4. A,B and C only

04. Select the Input, Process and Output of an ATM machine

1. Receiving Money-Check validity of the Account-Inserting Card
2. Check validity of the Account-Inserting Card-Receiving Money
3. Inserting Card-Receiving Money-Check validity of the Account
4. Inserting Card-Check validity of the Account- Receiving Money

05. Which is not a feature of a quality Information?

1. Simplicity
2. Relevancy
3. Cost-effectiveness
4. Accuracy

06. Select the response that matches columns

A. e-Government	i. RFID-Radio Frequency Identification Device
B. Education Sector	ii. Online Conferences
C. Health Sector	iii. View the constitution
D. Agriculture Sector	iv. MRI - Magnetic Resonance Imaging Machine
E. Business Sector	v. LMS- Learning Management Systems

1. A-v , B-i , C-iv, D-iii , E-ii
2. A-iv , B-v , C-iii, D-ii , E-i
3. A-iii . B-v , C-iv, D-i , E-ii
4. A-ii , B-v , C-iv, D-i, E-iii

07. The specialist heart surgeon of Pulmude hospital has gone on vacation to Europe. However an emergency patient needs immediate surgery. The junior surgeons can conduct the surgery according to the instructions of the specialist who joins using Telecommunication Technologies. what is the name you can give for the above scenario?

1. Tele Medicine
2. Home medicine
3. Teletraining
4. Tele-surgery

08. Which of the following is not a demerit of ICT?

1. Isolation
2. physical issues such as back pain, headache etc
3. Addiction
4. Poverty

09. What are the two generations respectively which started using integrated circuits as the main technology and started emergence of computer networks?

1. Second and Third generation
2. Third and Fourth generation
3. First and Third generation
4. Second and Fourth generation

10. What is the technology used for input, output and storage in first generation computers?

1. Punch Cards
2. Transistors
3. Assembly language
4. Machine language

11. What is not true about the function of a computer system?

1. Data and instructions fed to the computer first go to the Primary Memory
2. The stored information can be sent to an output device directly without using the Primary Memory
3. The data and information which are to be stored are sent to the Secondary Storage Device
4. Control Unit sends the control signals to all the devices attached to the computer system

12. What is the printer that operates by striking a head against a ribbon?

1. Line Printer
2. Laser Printer
3. Thermal Printer
4. Plotter

13. What is the technology to analyze human body characteristics for authentication purposes?

1. Meteorology
2. Biometrics
3. CCTV
4. Optical character recognition

14. Select incorrect statements regarding digital and analog signals

- A. Digital signals are represented by 0 and 1.
  - B. Sea Waves are examples for digital signals
  - C. When people talk analog signals are generated.
1. only A    2. B and C    3. A and B    4. A and C

15. Speed of Central Processing Unit (clock speed) is measured by.

- 1) MB      2) GB      3) Kps      4) GHz

16. Select the suitable word to fill in the blank.

The Central Processing Unit checks .....first to see whether the required data is available for processing. This memory is smaller in capacity yet faster. This is also called CPU Memory. The data frequently used are stored here.

1. Random Access Memory      3. Read Only Memory  
2. Primary Memory      4. Cache Memor

17. Select the incorrect statement:

1. ROM is a non volatile memory.  
2. Central Processing Unit is used to process data and information  
3. RAM also called as main memory is a volatile-memory  
4. secondary memory is fastest, lesser in size and located close to processor

18. Match the column A with Column B

Column A	Column B
X Solid State Devices	I. Hard Disk, Floppy Disk
Y Magnetic Media Devices	II. Memory Cards, USB Drives
Z Optical Media Devices	III. CD, DVD

1. X-I , Y-II, Z-III      3. X-III , Y-I, Z-II  
2. X-II , Y-I, Z-III      4. X-III , Y-II, Z-I

19. What is port that used to connect devices such as modem to the computer in earlier day?

1. Parallel      3. HDMI Port  
2. RJ 45 Port      4. Serial Port

20. Browsing internet to get information and walkie-talkie can be given as examples to which data transmission mode?

1. Simplex
2. Duplex
3. Half Duplex
4. Cannot Say exactly

21. What is the cable type that is used for CCTV and the wave type that travel in a linear mode so the transmission center is positioned facing each other?

1. Co-Axial & Microwaves
2. Fiber Optics & Microwaves
3. Co-Axial & Infrared
4. Twist Pair & Radio Waves

22. What is the network device that is used in getting the internet with telephone wires?

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

23. Which is not a benefit of Networking?

1. Sharing of Resources
2. Ability to control central software
3. Less storage space
4. Training requirements

24. A computer that is optimized to provide services to other computers in a network is known as

1. Desktop
2. Server
3. Workstation
4. Thin-client

Answer question 25-29 based on the following scenario.

Amila has  $1001101100_2$  rupees and wishes to buy a packet of rice for  $96_{16}$  rupees and a yogurt  $106_8$ . He also bought a piece of milk toffee for later spending  $20_{10}$  rupees.

25. Write the amount Amila had before purchasing as a decimal number.

1. 300 rupees
2. 275 rupees
3. 400 rupees
4. 200 rupees

26. Convert the price of a yogurt in to binary.

1.  $1110010_2$  rupees
2.  $1000011_2$  rupees
3.  $1000110_2$  rupees
4.  $1010101_2$  rupees

27. Convert the price of a packet of rice in to octal

- |                   |                   |
|-------------------|-------------------|
| 1. $345_8$ rupees | 3. $234_8$ rupees |
| 2. $226_8$ rupees | 4. $124_8$ rupees |

28. Find the balance Amila will receive after the purchase in decimal.

- |              |              |
|--------------|--------------|
| 1. 60 rupees | 3. 80 rupees |
| 2. 40 rupees | 4. 50 rupees |

29. Represent the price of a milk toffee in BCD code.

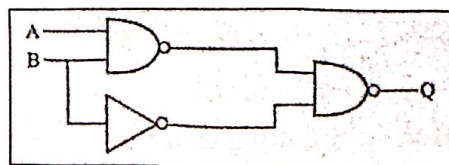
- |              |              |
|--------------|--------------|
| 1. 0010 0000 | 3. 1000 1100 |
| 2. 1010 0101 | 4. 0001 0010 |

30. Select the correct answer.

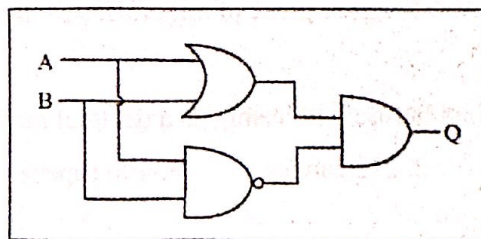
1. ASCII uses 8 bits per symbol and can represent 128 characters
2. EBCDIC uses 7 bits and can represent 256 characters
3. Unicode uses 4 bits and 65536 characters can be represented
4. ASCII is used to represent text while BCD is used for decimal numbers

31. Select the suitable logic gate for the Boolean expression  $(A+B) \cdot \overline{(A \cdot B)}$

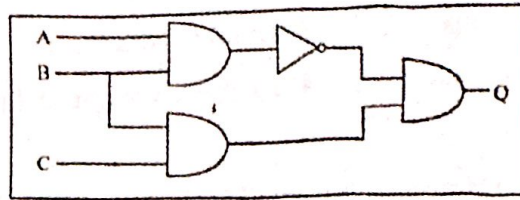
1.



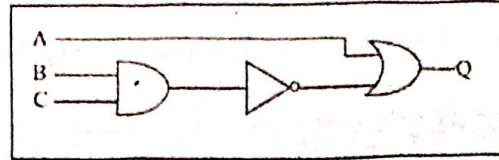
2.



3.

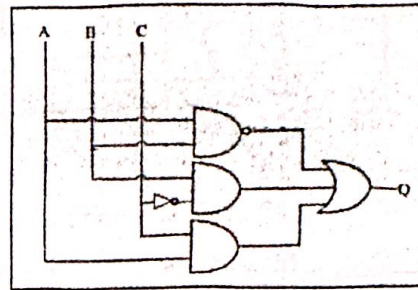


4.



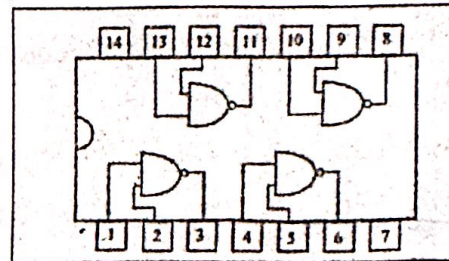
32. What is the Boolean expression for the following logic gate?

1.  $\overline{A+B} \cdot B + \overline{C} \cdot A + C$
2.  $\overline{A \cdot B} + B \cdot \overline{C} + A \cdot C$
3.  $A \cdot \overline{B} + B \cdot \overline{C} + A \cdot C$
4.  $\overline{A \cdot B} + B \cdot \overline{C} + A \cdot C$



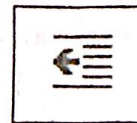
33. Consider the following logic circuit. If pins 1 = 1 and 2 = 0, what is the value of pin 3?

1. 1
2. 0
3. 101
4. None of the above



34. What is the name of the following symbol in Microsoft Word?

- |                         |                 |
|-------------------------|-----------------|
| 1. Decrease Indentation | 3. Margin       |
| 2. Increase Indentation | 4. Line spacing |



35. What is the shortcut key for replacing a word in Microsoft Word?

- |           |           |
|-----------|-----------|
| 1. CTRL+P | 3. CTRL+H |
| 2. CTRL+M | 4. CTRL+N |

36. What can we do using the thesaurus function?

1. Find Antonyms
2. Find Synonyms
3. To find and replace
4. To check spelling and grammar

37. what is the answer you would get by simplifying the equation  $5 - 2 * 3^2 / 6 - 3$  according to the operator precedence?

1. 11
2. 9
3. 13
4. 5

Refer the following excel sheet to answer from question 38-40.

	A	B	C	D	E	F	G	H
1	Student Name	Maths	Science	English	History	ICT	Total	Average
2								
3	Kamala	23	34	89	88	89		
4	Amal	45	56	90	76	78		
5	Mala	67	72	23	56	87		
6	Samitha	13	12	45	45	67		
7	Nafees	23	45	12	89	90		
8								
	Maximum mark							
9	for the subject							
10								

38. What is the formula to be written in the cell H3 to find the average mark of Kamala?

1. =AVERAGE(B3:F3)
2. =AVE(B3:F3)
3. =AVERAGE(B3:B7)
4. =AVE(B3:B7)

39. What is the formula to be written in the cell B9 to find the minimum mark for the subject math?

1. =MIN(B3:F3)
2. =MIN(B3:B7)
3. =MAX(B3:F3)
4. =MAX(B3:B7)

40. What is the feature to be used to find the average of all the students in the class easily just after finding the average of Kamala?

1. Auto fill
2. Fill handle
3. Count
4. copy-paste

ශ්‍රී ජයවර්ධනපුර අධ්‍යාපන කලාපය  
Sri Jayawardanapura Education Zone  
දෙවන වාර විභාගය- 2023  
Second Term Examination – 2023

Information Communication Technology

Grade – 10 - Paper -II

Time – 2 Hours

- Answer the first question and 4 other questions.
- 20 marks will be allocated for the first question and 10 marks each for other questions

1

1. Observe the following codes and mention where you can find each code.

a



b



Marks (1\*2 = 2)

2. Write True or False regarding Data communication. Mark ✓ or ✗ in your answer sheet with the question number.

- The network exist inside 16 Km or less is known as Metropolitan Area Network. (MAN)
- A Backbone cable is not needed for a Bus topology.
- Training requirements for a maintenance of a computer network is an advantage of networking.
- A firewall is a network security mechanism.

Marks (0.5\*4 = 2)

3. A Central Processing Unit of a computer which is using 2% for processing tasks is given below. Calculate the total figure in Hz.

View					
Performance	Activity history	Startup	Users	Details	Services
CPU 2% 1.68 GHz	CPU				11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz

Marks (2)

4. Functionality of RAM varies from 4.5GB (69%) in situation 1 to 6.3GB(82%) in situation 2. Give 4 reasons for the above variation.

Name	Status	CPU	Memory	Disk	Network	GPU	CPU engine	Power usage	Blow usage
Microsoft Word (2)		0%	308.8 MB	0 MB/s	0 Mbps	0%	GPU 0 - 3D	Very low	Very low
Task Manager		0%	28.1 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Windows Explorer		0.2%	52.2 MB	0 MB/s	0 Mbps	0%		Very low	Very low

Situation 1

Name	Status	CPU	Memory	Disk	Network	GPU	CPU engine	Power usage	Blow usage
Google Chrome (1)		0%	339.4 MB	0.2 MB/s	0 Mbps	0%	GPU 0 - 3D	Very low	Very low
Microsoft Word (2)		0%	173.0 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Photos		0%	0 MB	0 MB/s	0 Mbps	0%	GPU 0 - 3D	Very low	Very low
Task Manager		0.4%	30.5 MB	0 MB/s	0 Mbps	0%		Very low	Very low
WhatsApp (2)		0%	96.4 MB	0 MB/s	0 Mbps	0%	GPU 0 - 3D	Very low	Very low
Windows Explorer		0%	56.8 MB	0 MB/s	0 Mbps	0%		Very low	Very low
Zoom Meetings (2)		3.3%	264.9 MB	0 MB/s	0.1 Mbps	0%	GPU 0 - 3D	Low	Very low
Zoom Meetings (2)		0.1%	452.8 MB	0.1 MB/s	0 Mbps	0%	GPU 0 - 3D	Very low	Very low

Situation 2

Marks (0.5\*4 = 2)

5. Refer the following table which consists of column A and B. Match the answers from column B to the relevant description in column A, writing labels and numbers is enough in your answer sheet.

e	Can access information by scanning via mobile phone.
f	Receive education from anywhere at any time.
g	Receive education in the classroom.
h	A facility given by the government to citizens.

1	Video clips with experiments
2	QR code
3	Paying bills
4	E thaksalawa

Marks (0.5\*4 = 2)

6. Ashwitha has created a video with 67 108 864 bytes. She needs to store another video of same size in her USB Flash memory. But the remaining capacity in the flash drive is 78 MB. What is the capacity required to store both the videos? ( $2^{26} = 67\ 108\ 864$ )

Marks (0.5\*4 = 2)

Fill in the blanks with the correct word from the brackets.

- i. .... machine is used to take 3D images of different parts of the body.
- j. .... is used to take the consultation regarding emergency surgery by the doctors in a hospital which does not have consultants.
- k. Employee attendance is marked in a .... machines.
- l. Taking money via ..... machines.

(Finger print scanner, ATM, MRI, Remote surgery, CAT, Remote training)

0110 0190 1100

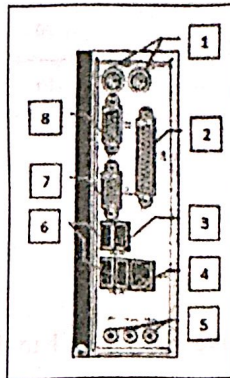
Marks (0.5\*4 = 2)

8. Write down the range of capacity in the following secondary storage devices.

- m. Compact Disc .....
- n. Digital Versatile Disk .....
- o. Blue ray disk .....
- p. Hard disk .....

Marks (0.5\*4 = 2)

9. Write down the devices that can be connected for the port numbers 1, 2, 3 and 4.



- q. PS/2 port .....
- r. Parallel port .....
- s. HDMI port .....
- t. Network port .....

Marks (0.5\*4 = 2)

10. What are the 2 types of printers? Write down an example for each.

ex: Inkjet, Laser printer

Marks (2)

2.

Answer the following questions with the knowledge of Coding systems.

a) Convert the following binary, octal and hexadecimal figures into BCD values.

	දශමය සංඛ්‍යාව	BCD අගය
465	465 <sub>10</sub>	0100 0110 0101
326 <sub>8</sub>	.....10	.....
1011010 <sub>2</sub>	.....10	.....
265 <sub>16</sub>	.....10	.....

Marks (0.5\*6 = 3)

b) Convert the following BCD values into binary, octal and hexadecimal.

BCD අගය	Decimal Value	Answer
0100 0101 0111	457 <sub>10</sub>	457 <sub>10</sub>
1001 1000 0110	.....10	.....16 (Hexadecimal)
0001 0010 0101	.....10	.....2(Binary)
0100 0110 0011	.....10	.....8(Octal)

Marks (0.5\*6 = 3)

c) A punch card format is displayed in figure 1 to display the word "DELL" using ASCII code. Identify the word and ASCII code given in figure 2 and write the answer. 0 represents holes and 1 represent empty squares.

	ASCII Code	Punch Card
D	1000100	0 0 0 0 0 0
E	1000101	0 0 0 0 0 0
L	1001100	0 0 0 0 0 0
L	1001100	0 0 0 0 0 0

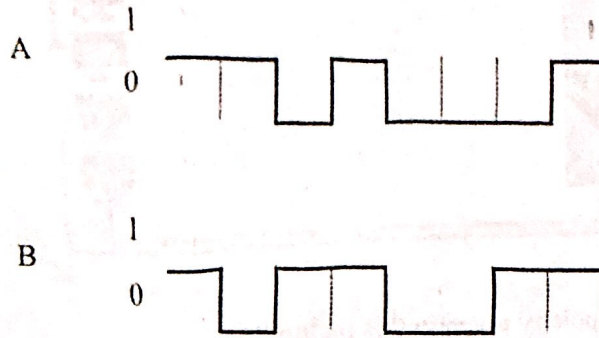
Figure 1

Answer	ASCII	Punch Card
.....	.....	0 0 0 0 0 0
.....	.....	0 0 0 0 0 0
.....	.....	0 0 0 0 0 0
.....	.....	0 0 0 0 0 0

Figure 2

Marks (0.5\*8 = 4)

b) Identify the following A and B inputs are given for a logic circuit.



Marks (1\*2 = 2)

b. Fill the following table regarding AND and OR operations for A and B.

A	B	(A AND B)	(A OR B)

Marks (2\*2 = 4)

c. Two switches attached to the beginning of top and bottom of the staircase in order to get the top floor of a building. The bulb in the staircase will light only when the downstairs switch is disconnected and upstairs switch is connected and upstairs switch is disconnected and downstairs switch is connected. The bulb will not light when both the switches are connected and both the switches are disconnected. Create the truth table for this scenario.

A	B	BULB

Marks (1\*4 = 4)

4. Several computers in a computer laboratory are connected to a switch as follows.



a) What is the network topology given in this picture?

Marks (2)

b) Mention 4 network topologies that you know other than the above topology.

Marks (4)

c) Write 2 differences in between hub and switch.

Marks (2)

d) Write down 2 steps that can be taken for the physical security of computers in the laboratory.

Marks (2)

5.

a. Write down the MSB/MSD and LSB/LSD of the following numbers..

	MSB/MSD	LSB/LSD		MSB/MSD	LSB/LSD
$10110_2$	-----	-----	$043.7560_8$	-----	-----
$0100101_2$	-----	-----	$BD63.10_{16}$	-----	-----
$26520_{10}$	-----	-----	$92.0060_{10}$	-----	-----

Marks (0.5\*12 = 6)

b. A student in grade 10 requires the following RGB colors and hexadecimal numbers in order to match the colors. Do the necessary calculations..

Hexadecimal	R	G	B
-----	121	48	33
#216379	-----	-----	-----

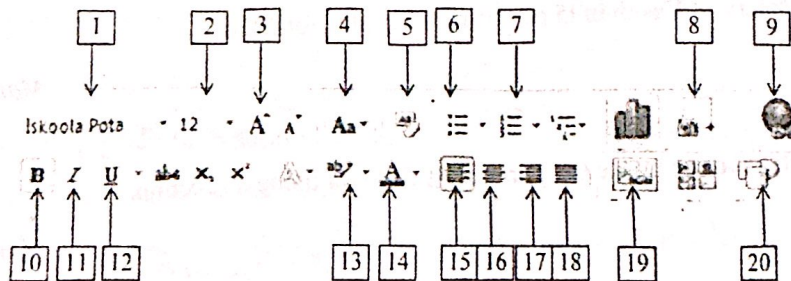
Marks (1\*4 = 4)

6.

Answer the following questions using the knowledge you gained from Word Processing software

- a) Importance of ICT
- b) Information and Communications Technology (ICT) plays a profound role in any business growth. It improves employee communication, automates many business operations, and enhances the transparency of your projects.
- c) The Importance of ICT in Education
- d)
  - Hardware
  - Software
  - Liveware
- e) Google
- f) ICT

Number	Instructions for processing	Label
1	Center the topic given in A	
2	Increase the font size of A	
3	Underline the topic A	
4	Make the paragraph B as bolded letters	
5	Highlight the word ICT in the topic A	
6	Insert bullets for the list items in D	
7	Insert a hyperlink for the word Google	
8	Remove all the formats given for F	
9	Insert an image in computer memory	
10	Make all letters in C as Uppercase.	



Select the labels for the above question using 1 to 20 tools. Marks will not be received if excessive labels are written. Writing the number and the label will be sufficient.

Marks (1\*10 = 10)

Sarasavi Corporation has presented the information regarding payments of employees within one week. Mention the calculations that has completed in Spreadsheet software using functions and formulas.

	A	B	C	D	E	F	G	H	I	
1				Sarasavi Corporation						
2	Allocating funds for Employee Provident Fund								8%	
3										
4	Employee No	Employee Name	Hours worked	Hourly rate	OT hours	Basic salary	Commission	EPF deductio	Net salary	
5	1	Yasith		50	200	10	8000	3000	640	10360
6	2	Hansi		42	150	2	6000	450	480	5970
7	3	Ravin		45	300	5	12000	2250	960	13290
8	4	Anuda		40	100	0	4000	0	320	3680
9	5	Yenuthi		48	400	8	16000	4800	1280	19520
10										
11	Total						46000	10500	3680	52820
12	Minimum number of hours should work per week			40						
13										

a) An employee should work at least 40 hours a week. Each employee has a specific hourly rate. Write a suitable formula in F% in order to calculate the basic salary for Yasith. The basic salary for other employees also should be calculated based on that.

Marks (2)

b) An Overtime hour rate would be one and half times of normal hourly rate. Mention the suitable formula for G5.

Marks (2)

c) Each employee provides a payment of 8% from basic salary for their EPF. Calculate it in H5 cell using a suitable formula.

Marks (2)

d) Calculate the net salary of Yasith in I5 cell using a suitable formula.

Marks (2)

e) Take the total payment done by the Corporation in F11 cell using a function.

Marks (2)