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**Sri Jayawardanapura Education Zone**  
 දෙවර වාර විභාගය - 2023 නොවැම්බර්  
**Second Term Test Examination – 2023**  
**Grade 10 – Paper I**

**Information and Communication Technology**

**One hour**

01. What is the 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 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 System             |

1. A-v , B-i , C-iv , D-iii , E-ii
2. A-iv , B-v , C-iv , 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 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 | 3. Teletraining |
| 2. Home medicine | 4. Tele-Surgery |

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

1. Isolation
2. Addiction
3. Physical issues such as back pain , headache etc
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 | 3. Third and Fourth generation  |
| 2. 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       | 3. Transistors      |
| 2. Assembly language | 4. Machine language |

11. What is not true about the function of 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 ribbon ?

- |                    |                  |
|--------------------|------------------|
| 1. Line printer    | 3. Laser printer |
| 2. Thermal printer | 4. Plotter       |

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

- |                |                                  |
|----------------|----------------------------------|
| 1. Meteorology | 3. Biometrics                    |
| 2. 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  | 3. A and B |
| 2. B and C | 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. Primary Memory  
2. Read Only Memory                                      4. Cached Memory

17. Select the incorrect statement :

1. ROM in 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 faster, 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 drivers |
| Z Optical Media Devices  | III. D , DVD                   |

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

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

1. Parallel  
2. HDMI port  
3. 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     | 3. Duplex             |
| 2. Half duplex | 4. Cannot say exactly |

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

- |                          |                              |
|--------------------------|------------------------------|
| 1. Co-Axial & Microwaves | 3. Fiber Optics & Microwaves |
| 2. 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 | 3. Firewall |
| 2. Modem  | 4. Switch   |

23. Which is not a benefit of Networking ?

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

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

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

• **Answer question 25-29 based on the following scenario.**

Amila has  $100101111_2$  rupees and wishes to buy a packet of rice for 96 rupees and a yogurt  $106_8$  . He also bought a piece of milk toffee for later spending 20 rupees.

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

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

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

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

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

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

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

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

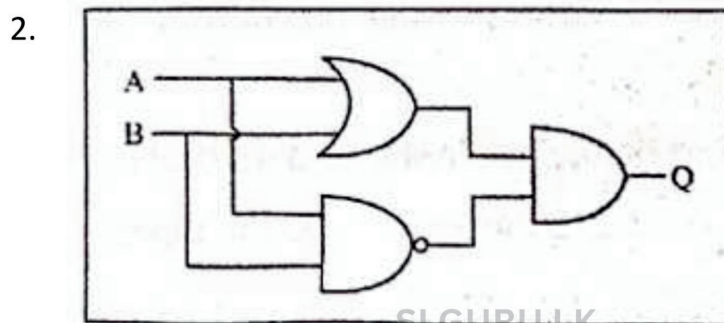
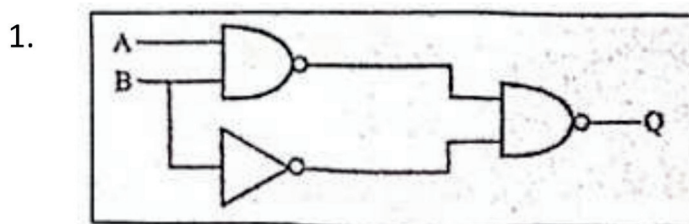
29. Represent the price of milk toffee in BCD code.

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

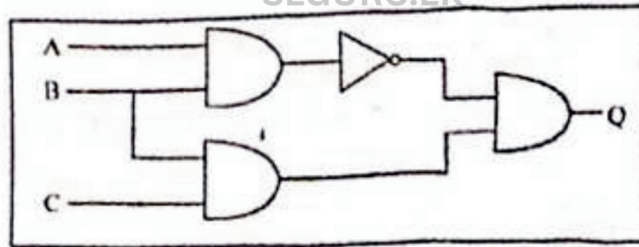
30. Select the correct answer,

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

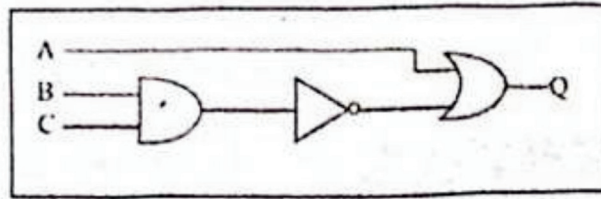
31. Select the suitable logic gate for the Boolean expression  $(A + B) \cdot \overline{(A \cdot B)}$



3.

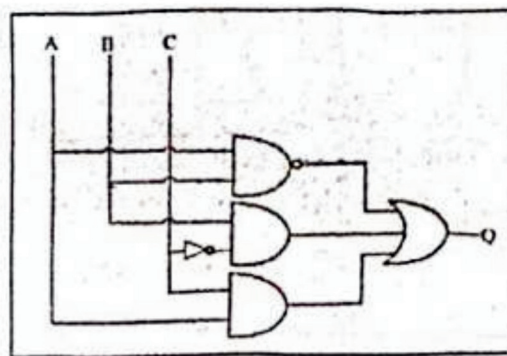


4.



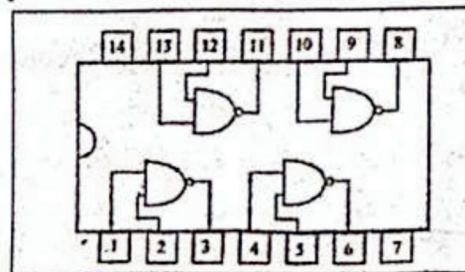
32. What is the Boolean expression for the following logic gate ?

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



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 symbols in Microsoft word ?

1. Decrease Indentation
2. Margins
3. Increase Indentation
4. Line spacing



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

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

36. What can we do using the thesaurus function ?

1. Find Antonyms
2. To find replace
3. Find synonyms
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

• Read 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. =AVARAGE (B3 : B7)
3. =AVE (B3 : F3)
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. =MAX (B3 : F3)
3. =MIN (B3 : B7)
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



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**Second Term Test Examination – 2023**  
**Grade 10 – Paper II**

Information and Communication Technology

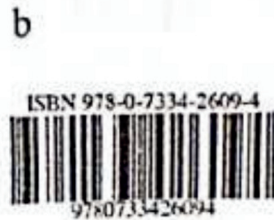
Grade 10- paper II

One hour

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

01.

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



Marks (1\*2 = 2)

2. Write true or false regarding data communication. Mark “✓” or “X” in your answer sheet with the question number.
- The network exist inside 16 km or less in known s Metropolitan Area Network (MAN)
  - A Backbone cable is not needed for a Bus topology
  - Training requirement 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      | Compatibility | Startup | Units | Details | Services                                       |
|------|------------------|---------------|---------|-------|---------|------------------------------------------------|
|      | CPU<br>2% 1080Hz |               | CPU     |       |         | 11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz |

Marks (2)

4. Functionality of RAM varies 4.5 GB (69%) in situation 1 to 6.3 GB (82%) in situation 2. Give 4 reasons for the above variation. Marks (0.5\*4= 2)

| Processes Performance App History Startup Users Details Services |        |      |          |        |         |     |            |  |               |               |
|------------------------------------------------------------------|--------|------|----------|--------|---------|-----|------------|--|---------------|---------------|
| Name                                                             | Status | CPU  | Memory   | Disk   | Network | GPU | GPU Engine |  | Private usage | Account usage |
| App                                                              |        |      |          |        |         |     |            |  |               |               |
| Microsoft Word - 2                                               |        | 2%   | 339.4 MB | 0 MB/s | 0 Mbps  | 0%  | GPU 0 - 30 |  | Very low      | Very low      |
| Task Manager                                                     |        | 0%   | 201 MB   | 0 MB/s | 0 Mbps  | 0%  |            |  | Very low      | Very low      |
| wrapows Explorer                                                 |        | 0.2% | 522 MB   | 0 MB/s | 0 Mbps  | 0%  |            |  | Very low      | Very low      |

*Situation 1*

| Processes Performance App History Startup Users Details Services |        |     |          |          |          |     |            |  |               |               |
|------------------------------------------------------------------|--------|-----|----------|----------|----------|-----|------------|--|---------------|---------------|
| Name                                                             | Status | CPU | Memory   | Disk     | Network  | GPU | GPU Engine |  | Private usage | Account usage |
| Apps (8)                                                         |        |     |          |          |          |     |            |  |               |               |
| > Google Chrome - 1h                                             |        | 8%  | 339.4 MB | 0.2 MB/s | 0 Mbps   | 0%  | GPU 0 - 10 |  | Very low      | Very low      |
| Microsoft Word - 2                                               |        | 8%  | 123.0 MB | 0 MB/s   | 0 Mbps   | 0%  |            |  | Very low      | Very low      |
| photos                                                           |        | 0%  | 0 MB     | 0 MB/s   | 0 Mbps   | 0%  | GPU 0 - 10 |  | Very low      | Very low      |
| Task Manager                                                     |        | 04% | 303 MB   | 0 MB/s   | 0 Mbps   | 0%  |            |  | Very low      | Very low      |
| WhatsApp - 2                                                     |        | 2%  | 96.4 MB  | 0 MB/s   | 0 Mbps   | 0%  | GPU 0 - 30 |  | Very low      | Very low      |
| Windows Explorer                                                 |        | 3%  | 36.8 MB  | 0 MB/s   | 0 Mbps   | 0%  |            |  | Very low      | Very low      |
| Zoom Meetings - 2                                                |        | 11% | 264.9 MB | 0 MB/s   | 0.1 Mbps | 0%  | GPU 0 - 10 |  | Low           | Very low      |
| Zoom Meetings - 12                                               |        | 01% | 452.8 MB | 0.1 MB/s | 0 Mbps   | 0%  | GPU 0 - 10 |  | Very low      | Very low      |

*Situation 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 any where at any time        |
| G | Receive education in the classroom                  |
| h | A facility given by the government to citizens      |

|   |                             |
|---|-----------------------------|
| 1 | Video clip with experiments |
| 2 | QR code                     |
| 3 | Paying bills                |
| 4 | E thaksalawa                |

Marks (0.5\*4= 2)

6. Ashwitha has created a video with 67 108 684 bytes. She needs to store video of same size in her USB flash memory. But the remaining 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)

7. 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 when does not have consultants.
- k. Employee attendance is marked in a .....
- l. Taking money via ..... machines.

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

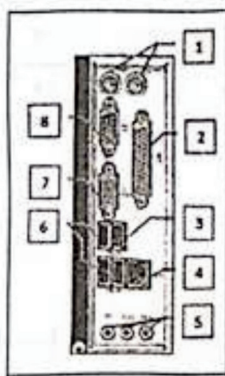
Marks (0.5\*4= 2)

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



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

Marks (0.5\*4= 2)

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

Marks (2)



02.

- Answer the following questions with the knowledge of coding systems.

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

|             | Binary number | BCD number     |
|-------------|---------------|----------------|
| 465         | $456_{10}$    | 0100 0110 0101 |
| $326_8$     |               |                |
| $1011010_2$ |               |                |
| $256_{16}$  |               |                |

Marks (0.5\*6= 3)

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

| BCD Number     | Decimal Value | Answer     |
|----------------|---------------|------------|
| 0100 0101 0111 | $457_{10}$    | $457_{10}$ |
| 1001 1000 0110 | .....10       | .....16    |
| 0001 0010 0101 | .....10       | .....2     |
| 0100 0110 0011 | .....10       | .....8     |

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    | 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 | 10001100 | 0 0 0 0 0 0 |

Figure 1

| Answer | ASCII    | Punch Card  |
|--------|----------|-------------|
|        | 1000100  | 0 0 0 0 0 0 |
|        | 1000101  | 0 0 0 0 0 0 |
|        | 1001100  | 0 0 0 0 0 0 |
|        | 10001100 | 0 0 0 0 0 0 |

Figure 2

Marks (0.5\*8= 4)



**For Educational Purpose Only**

## Information Communication Technology



Sri Jayawardanapura Zone

13

Marks (1\*2 = 2)

| A | B | BULB |
|---|---|------|
|   |   |      |
|   |   |      |
|   |   |      |
|   |   |      |

Marks (1\*4 = 4)

04. Several computer in 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)

05.

- 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 students 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     | ..... | ..... | ..... |

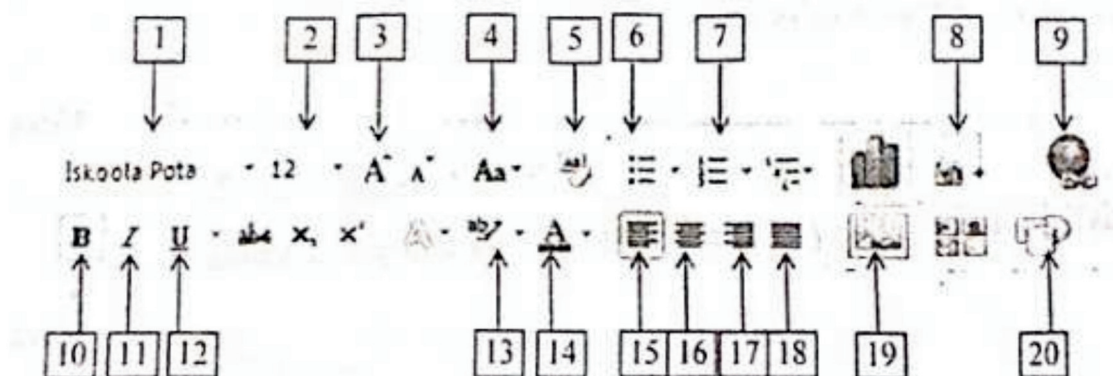
Marks (1\*4 = 4)

06. Answer the following questions using the knowledge you gained from word processing software

- a) Importance of ICT
- b) Information and communication 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 | Instruction 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 E     |       |
| 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 excess labels are written. Writing the number and the label will be sufficient.



07. Sarasavi corporation has presented the information regarding payments of employees within one week. Mention the calculations that has completed in spreadsheet software using function 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 deduction | 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 F5 in order to calculate 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)

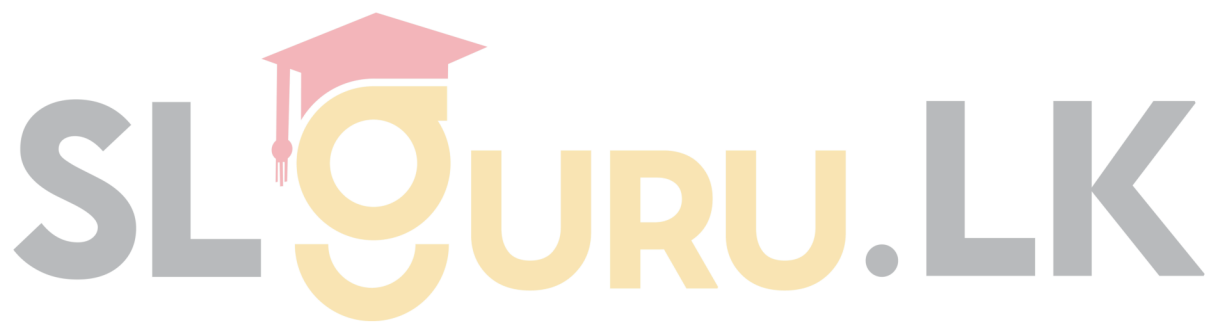
d) Calculate the net salary of y yasith in I5 cell using a suitable formula

Marks (2)

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

Marks (2)

“A book is a gift you can open again and again.” — Garrison Keillor



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