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Second Term Test - Grade 10 - 2023

Information and Communication Technology I

01 hour

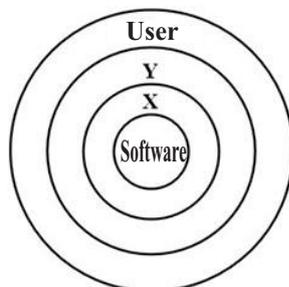
Index No.

- **Answer all the questions.**

01. A system is a group of components that work together to complete a task and what is the most appropriate answer that states the main functions of an information system?
- (1) Receiving data, processing data, saving and providing information when necessary
 - (2) Data input, processing and storage
 - (3) Providing data and processing of received data
 - (4) Input data , data processing and output information
02. World's first mechanical computer wasA..... and usingB..... Charles Babbage inventedC..... andD..... was a first generation computer. What would be the appropriate answers for the blanks A B C and D respectively?
- (1) Adding machine ,punch card system, Analytical Engine, UNIVAC
 - (2) UNIVAC, Adding machine , punch card system, Abacus
 - (3) Abacus, punch card system , Analytical Engine, UNIVAC
 - (4) Adding machine, UNIVAC , punch card system ,Analytical Engine
03. What is the appropriate abbreviation for a device used as an animal farm input that is placed on the body of an animal and can record and monitor the animal's information?
- (1) POS (Point Sales)
 - (2) RFID (Radio Frequency Identification Device)
 - (3) MRI (Magnetic Resonance Imaging Machine)
 - (4) CSM (Cardiac Screening Machine)
04. The end of the third generation was marked with the discovery of..... What is the most appropriate answer?
- (1) vacuum tubes
 - (2) transistor
 - (3) VLSIC
 - (4) ULSIC
05. A student prepares a report using word processing software. What is the best way to include a picture from a printed book in the soft copy of this report?
- (1) keyboard
 - (2) mouse
 - (3) printer
 - (4) scanner

06. The technology that can be used to convert printed documents of many pages into scanned and editable computerized documents is,
- (1) OCR – Optical Character Recognition
 - (2) OMR – Optical Mark recognition
 - (3) MICR – Magnetic Ink Character Recognition
 - (4) Barcode Reader
07. Which of the following contains only input devices?
- (1) Multimedia Projector, printer, keyboard, mouse
 - (2) Printer, keyboard, touch screen, joystick
 - (3) Computer screen, light pen, multimedia projector, keyboard
 - (4) Mouse, keyboard, light pen, joystick
08. Imagine that you want to use a credit or debit card for payment after buying goods in a supermarket. What device should the store have to provide this payment facility for purchased items?
- (1) ATM
 - (2) Barcode Reader
 - (3) Card Reader
 - (4) scanner
09. What type of scanner can be used to evaluate multiple choice answer papers?
- (1) OCR
 - (2) OMR
 - (3) MSR
 - (4) MICR
10. Which types of computer networks are used to interconnect a number of bank branches spread across the country.
- A - Local Area Network
B - Wide Area Network
C - Metropolitan Area Network
- (1) A only
 - (2) B only
 - (3) C only
 - (4) A and B only
11. The most suitable device for a data entry operator who is constantly entering data.
- (1) Mini Computer
 - (2) Laptop Computer
 - (3) Desktop Computer
 - (4) Mainframe computer
12. What type of computer does the ECG machine used in the hospital belong to?
- (1) Mini computer
 - (2) Analog computer
 - (3) Digital computer
 - (4) Hybrid computer

13. The main difference between Network Hub and Switch in data transmission is,
- (1) In data transmission, the network hub transmits data as full duplex and the switch as half duplex.
 - (2) During data transmission, the networking hub transfers data only to the required computer.
 - (3) The switch creates unnecessary traffic during data transfer
 - (4) In data transmission, the network hub transmits data as half duplex and the switch as full duplex
14. Choose the false statement from the following statements.
- (1) Very powerful computers are called supercomputers.
 - (2) A Mainframe is a type of computer that can serve a large number of users simultaneously.
 - (3) Mini computers are more powerful than mainframes.
 - (4) Laptops and personal computers belong to the category of microcomputers.
15. What is the name of the software used by the operating system to control devices?
- (1) application software
 - (2) antivirus software
 - (3) device drivers
 - (4) malware
16. The purpose of a computer network password is to,
- (1) Allowing the public access to it.
 - (2) Security and access control.
 - (3) Acceleration of computer operations.
 - (4) Providing equal benefits to all users.
17. Which of the following is an advantage of a computer network over a stand-alone computer?
- A - Ability to share data between machines on the network.
 B - Costing less space to install software on machines on the network.
 C - Shared use of software applications on the central server
- (1) A only
 - (2) B only
 - (3) A and B only
 - (4) Above all
18. Consider the figure below



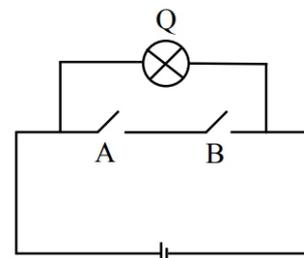
Which of the following is most appropriate for its X and Y?

- (1) X = operating system, Y = application software
- (2) X = application software, Y = operating system
- (3) X = utility software, Y = operating system
- (4) X = application software, Y = application software

19. Consider the following statement with spaces.
 The source code of a.....software cannot be modified or controlled by anyone other than the person, group, or organization that created it
 Software has free licenses to use, modify and distribute.
 Which of the following phrases are suitable to fill in the blanks above?
- (1) Closed source, commercial
 (2) Commercial , Closed source
 (3) free and open source, proprietary
 (4) proprietary, free and open source
20. Which of the following is an example of utility software in a computer system?
 A - Disk Defragmenter
 B - Word Processing Software
 C - Web Browser
 D - Antivirus Software
- (1) A only. (2) B and D only. (3) C and D only. (4) A and D only.
21. Which of the following values does not represent the number FF_{16} ?
 (1) 377_8 (2) 277_8 (3) 11111111_2 (4) 255_{10}
22. What is the octal equivalent of the hexadecimal number $A90_{16}$?
 (1) 0520_8 (2) 5202_8 (3) 5220_8 (4) 5020_8
23. Eight gigabytes (8 GB) contain ?
 (1) 2^{33} bit (2) 2^{33} byte (3) 2^{30} KB (4) 2^{22} MB
24. Which of the following cannot be a BCD value?
 (1) 0101 1000 (2) 1001 1001 (3) 1000 0000 (4) 1010 1000
25. According to the ASCII code system (ASCII), if the ASCII value of the letter O is 79, then the binary code of the ASCII value of the letter M is ?
 (1) 1001110 (2) 1001111 (3) 1001101 (4) 1000111

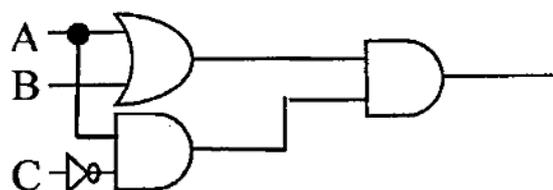
26. The logic gate represented by the following analog circuit is ?

- (1) OR Gate
 (2) NOR Gate
 (3) NAND Gate
 (4) XOR

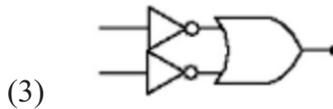
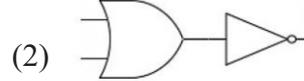
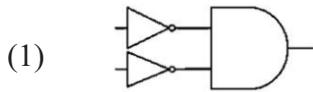


27. The Boolean expression for the output of in the following logic circuit is

- (1) $(A+B) \cdot (A \cdot C')$
 (2) $(A \cdot B) \cdot (A \cdot C')$
 (3) $(A+B) + (A \cdot C)'$
 (4) $(A+B) \cdot (A \cdot C)$



28. What is the equivalent of the Boolean expression $(A \cdot B)'$?



29. What is the correct ascending order of the given storage devices according to capacity

A - Cache memory

B - Flash memory

C - Memory register

D - Random access memory

(1) ACDB

(2) CADB

(3) CABD

(4) ACBD

30. A person who went to a restaurant ordered bread (B) or string hoppers (S) and potato curry (P) with dhal (D) for his breakfast. What is the Boolean logic corresponding to this phenomenon?

(1) $(B \text{ OR } S) \text{ AND } (D \text{ AND } P)$

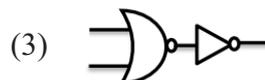
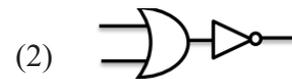
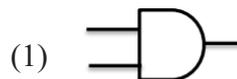
(2) $(B \text{ AND } S) \text{ AND } (D \text{ OR } P)$

(3) $(B \text{ OR } S) \text{ OR } (D \text{ AND } P)$

(4) $(B \text{ OR } S) \text{ AND } (D \text{ OR } P)$

31. The logic circuit shown in the following truth table is

X	Y	F
0	0	1
0	1	0
1	0	0
1	1	0



32. The following statement A has been formatted as B using word processing software. What tools should be used for this?

A - Technology is best when it brings people together.

B - **Technology is best when it brings people together.**



33. Following are some of the facilities available from application software such as word processing software, spreadsheet software. Among them, which facility can only be obtained by word processing software?

(1) Spelling and grammar checking.

(2) Saving and opening files with passwords.

(3) mail merge

(4) change orientation as portrait/landscape

34. Word processing software is prevalent in the computer world. Among them, the 3 word processing software that should be *installed and used on the computer*, that *can be used in cloud computing*, and that are *used in modern mobile phones* are indicated in which answer respectively?

(1) Office 365 word, Open office writer, Polaris office

(2) Office 365 word, Polaris office, Open office writer

(3) Open office writer, office 365 word, Polaris office

(4) Office 365 word, Polaris office, Open office writer

35.



Above are three tools available in word processing software. What is the order of edits possible with these tools?

- (1) Applying superscripts, numbering, changing simple into capital in English letters.
- (2) Simple capital transfer of English letters, arrangement of space between lines, coloring of letters.
- (3) Increase font size, apply bullets, apply font.
- (4) Apply superscript, making Bold, increase font size.

Use the worksheet section provided for questions 36 and 37.

	A	B	C	D
1	Item	Price(Rs)	Disscount(Rs)	Sale Price(Rs)
2	Book 40 p	75	3.75	71.25
3	Book 80 p	120		
4				
5	Discount	5%		

36. What is the value in cell C3 , If the formula in cell C2 is =B2*B\$5?
 (1) 0 (2) 5 (3) 6 (4) 0.5
37. The formula that cannot obtain the value in cell D2 is,
 (1) =B2-C2 (2) =SUM(B2-C2)
 (3) =B2-B2*B\$5 (4) =B2-B2*5%

Questions 38 and 39 are based on the spreadsheet section below.

	A	B	C	D
1	25	68		
2	15	35		
3	52	55		
4	27	48		
5				

38. What formula should be written in cell A5 to display the largest number of values in the cell range A1:A4?
 (1) =count(A1:A4) (2) =maximum(B1:B4)
 (3) =max(A1:A4) (4) =sum(A1:A4)
39. What formula should be written in cell B5 to find the average value of the values in the cell range A1:B4?
 (1) =average(B1:B4) (2) =average(A1:A4)
 (3) =average(B1:A4) (4) =average(A1:B4)
40. Which of the following is not a bad effect of ICT?
 (1) Addiction (2) Theft of intellectual property
 (3) Invasion of privacy (4) Restlessness



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Second Term Test - Grade 10 - 2023

Information and Communication Technology II

02 hours

Index No.

- Answer only 05 questions including the first question.
- The first question carries 20 marks and each other question carries 10 marks.

(01) Write short answers.

- (i) The weather station records the daily rainfall values for one month. Write 2 examples for the information that can be obtained by processing the daily rainfall data mentioned above.
- (ii) (a) Write 2 types of input devices that can input digital images directly into the computer.
 (b) Write 2 types of data storage media that can be used to exchange data or programs between two users.
- (iii) Identify and Write the feature for each computer generation shown in the 1st column with the 2nd column.

computer generation	feature
(1) First Generation	(A) Introduces operating system with GUI
(2) Second Generation	(B) Using Punch card System
(3) Third Generation	(C) Beginning of high level programming languages
(4) Fourth Generation	(D) Start of Operating System

- (iv) (a) Convert 47_{10} to its binary equivalent.(Show steps)
 (b) Below is an extract of the ASCII table. Write the octal value corresponding to what is indicated by '?'.

Character	Decimal	Hexadecimal	Binary	Octal
a	97	61	1100001	?

- (v) (a) Draw the logic circuit corresponding to the Boolean expression given below.

$$F = AB' + C'$$

- (b) Write the value of F when A=0, B=1 and C=1
- (vi) Consider the incomplete statements given below.

The basic component of a computer system is the central processing unit. It is also the operator of the operating system and application software. When processing is done central processing unit uses itsA.....to temporarily store fetched data fromB.....

Word List –(from hard disk , register memory , from main memory , cache memory)

(vii) Some devices used for computer networking are given in Part 1 and related details in Part 2. Write the number corresponding to the description of the device contained in Part 1 on the answer sheet.

Part 1	Part 2
A. Network switch	1. Data transmission is done using copper cables
B. Network hub	2. Data transmission is done using Fiber optics cables
C. Fibre cables	3. Full duplex mode
D. Coaxial cables	4. Protects against unauthorized access
E. Fire wall	5. Half duplex method is used in data transmission

(viii) Consider the following types of software.

Ubuntu , Web Browser , Compiler , Computer Games, Interpreter , Anti Virus Software, Spread Sheets ,Disk Defragmentation , windows 7

Write 2 operating systems and 2 application software among the above list.

(ix) Given below is a part of word document with a few formatting.

Mahaweli River

1
≈
2

3

The Mahaweli River is a 335km long river , ranked as the longest river in Sri Lanka. It has a drainage basin of 10,448 km² which is the largest in the country, which covers almost one fifth of the total area of the island.

Source : <https://en.wikipedia.org/wiki/Mahaweli> 4

Given below are some of the tools and their labels P-V used in word processing software

Icon related to the formatting tool							
Label	P	Q	R	S	T	U	V

Write down the labels 1-4 with their corresponding formatting tool.

(x) Learning Management Systems (LMS) are used for administration in schools and higher education institutions. Write 2 facilities provided to students by a learning management system.

- (02) (i) (a) Consider statements 1 to 4 below, which corresponds with computer memory.
1. Memory directly accessible to the central processing unit
 2. Memory that permanently stores data and information
 3. Memory that stores the data and instructions necessary for the computer's basic operation
 4. Memory that acts as an intermediate between the central processing unit and primary memory

Choose the term that best matches the clauses 1 to 4 above from the list below and write the number in front of it.

List - volatile memory, read-only memory (ROM), Random Access Memory (RAM), cache memory, Auxiliary memory

- (b) Some data storage media are given below. Write 2 magnetic media devices and 2 optical media devices from the list.

List -Flash Memory, Hard Disk , CD ,Magnetic Tape , Memory chip, DVD

- (c) Identify the ports presented from P to R below. Complete the table below by choosing its Port from list 1 and device that can be connected to it from list 2.



P



Q



R



S

	Port	Connected Device
P		
Q		
R		
S		

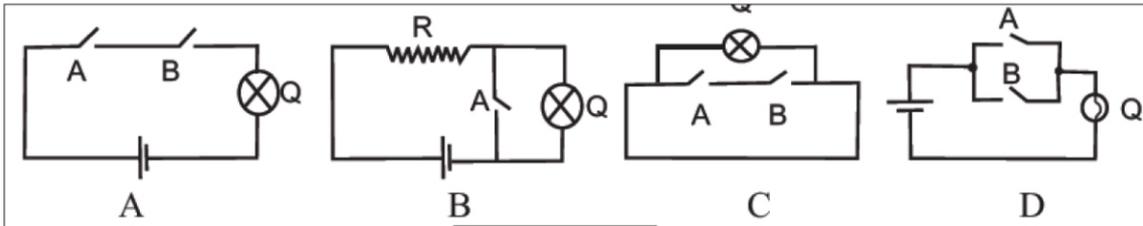
Port - VGA , HDMI , PS/2 , RJ45 , USB , Serial

Connected Device -Keyboard, Network Cables, Printer, Digital TV, Modem

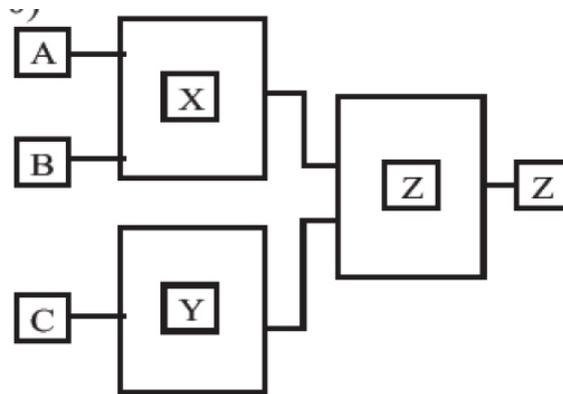
- (03) (i) Find the binary equivalent of the decimal number $25D_{16}$
- (ii) Find the BCD value of decimal number 321.
- (iii) A student needs to store 2.5MB video file and 512MB audio file stored on the computer.
- a) What is the total capacity of this file in MB??
 - b) What is the most suitable optical storage device to store and carry this entire file?

- (iv) If the ASCII value of letter B is 66, what is the ASCII code of letter L?(Answer should be given in steps.)
- (v) Sort the following devices by data access speed from the slowest device to the fastest device(volatile memory/Digital Versatile Disk/memory register/Random Access Memory)

(04) (a) Below are some simple electrical circuits drawn by a teacher to explain each logic gate



- (i) Write down the name of the logic gate with the label shown in the diagram.
 - (ii) Which of the above logic gate is used to describe a combinational logic gate?
- (b) The lift process of an elevator is as follows. The elevator has two doors, an inner door and an outer door. When both doors are closed and the total weight of the elevator is less than 1500 kg, the elevator will operate. An incomplete logic circuit drawn by a student is shown below.



- A Inside Sensor (Closed = 1 Open = 0)
 - B Outer Door Sensor (Closed = 1 Open = 0)
 - C Weight sensor (More than 1500 kg = 1 Less than 1500kg = 0)
- Output 1 Elevator is running
 0 The elevator does not operate.

- (i) Identify the gates x y and z in the above circuit and write its name.
- (ii) Draw a suitable truth table for the above circuit

(05) Below is a document prepared using word processing software

CYBER SECURITY ← 1

2
Cybersecurity means protecting data, networks, programs and other information from unauthorized or unattended access, destruction or change. In today's world, cybersecurity is very important because of some security threats and cyber-attacks. For data protection, many companies develop software. This software protects the data. Cybersecurity is important because not only it helps to secure information but also our system from virus attack. After the U.S.A. and China, India has the highest of internet users.



3

number Sri Lanka CERT is the National institute for Cyber Security, which has the national responsibility of protecting the nation's cyberspace from cyber threats.

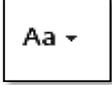
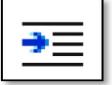
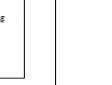
- Cyber Threats
- Cyber Crime
- Cyber Warfare

← 4

Sri Lanka CERT is the *National Centre for Cyber Security*, which has the national responsibility of protecting the nation's cyberspace from cyber threats.

Help for You : <https://cert.gov.lk> ← 5

(a) Select the tools used for the formations labeled 1 - 5 from the statements below and write down the corresponding English letter. Write the number belonging to the format and the letter of the tool used in front of it in your answer sheet.

								
නිරූපන ලේඛනය	A	B	C	D	E	F	G	H

(b) Select the appropriate words in brackets to fill in the blanks in the following terms related to the document shown in Figure-1.

- (i) To change the orientation of this document to Landscape, click on theP..... in the Layout tab.....
- (ii) For the substitution of a word having the same meaning for the word Crime hereinQ.....The 'Thesaurus' tool in the tab can be used.
- (iii) The number of words contained in the document indicatesinR.....
- (iv) To find the word 'institute' in this document and then replace the word 'Centre' in every place where that word occurs can useS.....

- (v) When using this document as a soft copy, use the hyperlink at the bottom of it and click on the hyperlink with the T..... key on the keyboard to connect to the website mentioned therein.

[Ctrl + X, References, Ctrl + H, Status Bar Ctrl, Alt, Orientation, Size Review]

- (06) Below is part of a worksheet prepared by a bookstore selling stationery, regarding the sales of various items in their bookstore during the first three months of the year.

PRAGATHI BOOK SHOP											
										Welfare Fund	2%
Item	Unit Price	January		February		March		Sub Total	Average of Income	Welfare	
		Units Sold	Amount	Units Sold	Amount	Units Sold	Amount				
CR 2- Book	Rs. 495.00	140	Rs. 69,300.00	120	Rs. 59,400.00	100	Rs. 49,500.00	Rs. 178,200.00	Rs. 59,400.00	Rs. 3,564.00	
CR 3 Book	Rs. 595.00	130	Rs. 77,350.00	70	Rs. 41,650.00	72	Rs. 42,840.00	Rs. 161,840.00	Rs. 53,946.67	Rs. 3,236.80	
Drawing Book -A3	Rs. 370.00	95	Rs. 35,150.00	40	Rs. 14,800.00	35	Rs. 12,950.00	Rs. 62,900.00	Rs. 20,966.67	Rs. 1,258.00	
Pastal - 24 Colours	Rs. 250.00	90	Rs. 22,500.00	30	Rs. 7,500.00	12	Rs. 3,000.00	Rs. 33,000.00	Rs. 11,000.00	Rs. 660.00	
Water Colour -12 Colou	Rs. 450.00	60	Rs. 27,000.00	12	Rs. 5,400.00	10	Rs. 4,500.00	Rs. 36,900.00	Rs. 12,300.00	Rs. 738.00	
Drawing Paper- A2	Rs. 45.00	120	Rs. 5,400.00	60	Rs. 2,700.00	70	Rs. 3,150.00	Rs. 11,250.00	Rs. 3,750.00	Rs. 225.00	

- (i) Write the function to be entered in cell D6 to calculate the total income received from the sale of 2 CR Books in January.
- (ii) The Total income received from sale of 2CRbooks in these three months is calculated in cell I6. Write an equation with functions that can be used for that calculation.
- (iii) Write an equation that can be entered in cell J6, using only the Sum and Count functions, to find the average of the income from the sales of 2CRbooks for the three months.
- (iv) This institution has decided to allocate 2% of the income received within these three months from the sale of each item for welfare programs. Accordingly, the amount related to each item is shown in column K (Welfare). Write down the equation to be entered in cell K6 to calculate that value in relation to 2CR books.

NB -

This equation should be copied for other items as well .

The percentage value given in the cell should be used in the calculation.

- (v) A graph should be drawn to compare the unit price of each item.
- (a) Name a suitable type of graph for it.
- (b) Write down the range of cells to select to create the graph.

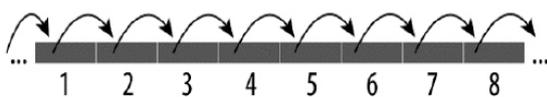
(07) (i) Below is how operating systems can be classified based on functionality. But in the table below, the functions related to operating systems and their examples are not correct. Copy this table in your answer sheet and write the table in correct order. Type of operating system, Functional Description, operating systems

Type of operating system	Functional Description	Operating systems Examples
1. Single User	Provides service to multiple users simultaneously.	Linux, Ms Dos
2. Multi User	Provides service to a user for only one task.	Windows 10, Fedora
3. Multi-Tasking	The results are delivered as soon as the inputs are given which are designed only for a particular task.	Ubuntu, ATM, windows server
4. Real time	Performs multiple tasks simultaneously. Calculator, Unix	Calcalater, Unix

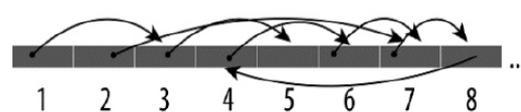
(ii) Consider the file name and file extension in the table below and specify the corresponding file type in front of them

file name and file (A)	File type (B)
1 setup.exe	
2 school.ppt	
3 school.docx	
4 salary.db	

(iii) The diagram below shows two ways in which a computer accesses files. Write these two file accesses separately.



A



B

(iv) Name A and B in the following figure and give 2 examples each.

