**NAME:………………………………………….CLASS:……….ADMNO:……..**

**COMPUTER STUDIES EXAMINATION**

**FORM 4 (451/1)**

**OPENER EXAMINATION TERM 3, 2022**

**SEPTEMBER 2022**

1. Name the two common types of system units and differentiate them. (2 marks)

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**2.** Define the following characteristics of a computer system. (2 marks)

Versatile

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Reliable

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3. State any **three** types of computer programme documentation. (3marks)

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4. Name any **three** effects of ICT on health. (3marks)

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5. List **one** function of a bridge in computer network. (1mark)

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6. a) Convert 11110001101112 to its octal equivalent (1mk)

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b) Convert 512.258 to its base 10 equivalent. (2mks)

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7. With an aid of a diagram, differentiate between selection control structure and iteration control structure.

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| --- | --- |
|  | (4marks) |
|  |  |
|  |  |

8. a) Auki company is in the process of computerizing its services. List four measures that should be put into consideration to protect the users in their computerized areas. (2 marks)

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(b) Give two reasons why powder and liquid extinguishers are not recommended unlike gaseous extinguishers. (2 marks)

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9. Without proper marketing, a business cannot survive in a competitive environment hence computers are being used in a number of ways to enhance marketing. List any three ways of ensuring this is affected.

(3 marks)

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10. Describe the following terms as used in computers. (3 marks)

***Tab Key***

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***Space bar***

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***Clicking***

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11. Control unit is an essential component of the CPU. Describe the functions of the control unit. (2marks)

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12. (a) Differentiate between buffers and Registers. (2 marks)

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(b) Speech recognition devices are used to capture natural sound and convert the input into digital form. State two problems related to speech recognition devices. (2 marks)

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13. Define Solid-state storage and give two examples. (2 marks)

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14. (a) Explain how a pixel affects the resolution of a monitor. (1 mark)

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(b) List two types of computer output on microform (COM). (2 marks)

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**15**. a) Give three advantages of using ATM cards**.** (3marks)

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b) Differentiate between pasteboard and master page as used in DTP. (2 marks)

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**SECTION B (60 Marks)**

**Answer Question 16 (Compulsory) and any other three questions from this section.**

16. a) State two advantages and two disadvantages of high level programming language. (2 Marks)

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b) State three situations when REPEAT .. UNTIL structure can be used in writing a program. (3marks)

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c) The roots of the equation **ax2** **+ bx + c = 0** are given by the formula below:



Study the pseudocode for the above formula and then draw a flowchart to represent it. (10marks)

*BEGIN*

*INPUT A, B, C*

*D= (B\*B)-(4\*A\*C)*

*IF D<0 THEN*

*X1=INVALID*

*X2=INVALID*

*ELSE*

*IF D=0 THEN*

*X1= -B/(2\*A)*

*X2=X1*

*ELSE*

*IF D>0 THEN*

*X1= (- B + SQRT(D))/(2\*A)*

*X2= (- B - SQRT(D))/(2\*A)*

*END IF*

*END IF*

*END IF*

*PRINT X1, X2*

*STOP*

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**17.** a) In order to generate information from data items, a set of processing activities have to be performedon the data items in a specific sequence depending on the desired result. Draw a well labeled

diagram to illustrate data processing cycle. (2 marks)

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b) A data entry clerk experiences some common errors when typing. Most of the time, she finds that:

i) After every calculation, the result is less than the expected number of digits required e.g. 345.7896543 the result is given as 345.789.

ii) Different characters are typed wrongly, for example instead of typing 12873457 she types 128734S7.

Identify the two types of errors commonly experienced by the clerk during data processing in (i) and (ii) above respectively. (2 marks)

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c) State two ways a user can ensure data accuracy is maintained during data processing. (2 marks)

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d) i) State three advantages of a computerized filing system as used in data processing. (3 marks)

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ii) State two disadvantages of a serial file organization method in computing. (2 marks)

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iii) Differentiate between distributed processing and interactive processing modes; stating one

application area of each. (4 marks)

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18. (a) Write the following acronyms in full as used in operating systems.

|  |  |  |  |
| --- | --- | --- | --- |
| *(i)* | *GUI -* |  | *(½ mark)* |
| *(ii)* | *WIMP-* | *.* | *(½ mark)* |

b) State **three** factors considered when choosing an operating system for use in a computer. (3 marks)

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c) An operating system manages and organizes a computer system using the following structures:

**File**, **Folder** and **Drive**. State the meaning of the underlined items respectively. (3 marks)

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d) i) Differentiate between error handling and interrupt handling as used in operating systems. (2 marks)

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ii) State **three** reasons why most network technicians prefer using command line operating systems to configure networking equipment. (3 marks)

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e) Disk management is one important aspect in secondary storage in computer systems. Explain the

following tools used by an operating system to manage disks in the computer. (3 marks)

**i) Formatting**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ii) Partitioning**

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**iii) Defragmentation**

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19. a) Define the following terms as used in networking. (3marks)

i) Network

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ii) Intranet

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iii) Browser

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b) The World Health Organization is global entity that deals with health issues around the world. It has

computer networks linking its regional and continental offices using internet. State **two** importance of the Internet to such organization. (2 marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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c) Mr. Zuma, the Principal of a school wishes his school to have an internet connection in a bid to improve its service delivery. Mention **four** internet connectivity requirements that must be present to enable the

connection. (2 marks)

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d) Explain the following as used in e-mail:

|  |  |  |
| --- | --- | --- |
| • | ***Inbox****-* | *(1 mark)* |
| • | ***Drafts****-.* | *(1 mark)* |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) i) Failure of information systems is a major concern in the security of data in computing systems. State **two** causes of such failure. (2 marks)

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ii) Explain the following computer crimes.

**Fraud (1 mark)**

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**Industrial espionage** (1 mark)

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iii) Excluding passwords, state **two** other security control measures used to guard against unauthorized

access to computers in a network. (2 marks)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **20.** (a) Convert the 1010.0112to decimal equivalent. | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | ( 3 marks) | | | | | | |
|  | | |  |  | |  |  | | |  | | |  | | | | | | | | |  | | | | |  |  | | | | | |  | | | | | | |
| (b) Perform the following number system conversions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | (3 marks) | |
| (i) 342.258 to binary. | | | | | | |  |  | | | | | | |  | | | | | | |  | | | | | | |  | |  | | | | |  | |  | |
|  | | |  |  | |  |  |  | | | | | | |  | | | | | | |  | | | | | | |  | |  | | | | |  | |  | |
|  |
| (ii) 50310 to hexadecimal | | | | | | | |  | |  |  | |  | |  |  |  |  |  |  | |  |  |  |  | | |  |  | |  |  | |  | | (3 marks) | |  |
|  | |  | |
| (c) **(i)** Compute the binary arithmetic given below: | | | | | | | | | | | | | | | | | | | | | | | | |  | | |  |  | |  |  | |  | | (3 marks) | |  |

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| 10111 + 10001 + 101  d) Using 8-bit notation, perform the **twos** Complement of 2510 -1510, leaving your answer in binary. (4marks) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |