CICT PART I SECTION 1

INTRODUCTION TO COMPUTING

MONDAY: 23 November 2020.   **Time Allowed: 3 hours.**

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

(a) With the aid of a diagram, explain five basic components in the systematic computer architecture.   (10 marks)

(b) Mobile telephony companies are migrating their clients to the 4G computer networks.

With reference to the above statement:

(i) Describe 4G as applied in computing.   (2 marks)

(ii) State four reasons that have necessitated the migration of clients to 4G computer networks.   (4 marks)

(c) Describe four notable physical milestones that have been achieved through technological advancements of computer hardware over time.   (4 marks)

(Total: 20 marks)

QUESTION TWO

(a) State the outcome of pressing the following keys on the computer keyboard in word processing:

(i) ctrl + Home.   (1 mark)

(ii) ctrl + PrintScrn.   (1 mark)

(iii) shift + Insert.   (1 mark)

(b) Highlight four considerations that should be made before a software is installed.   (4 marks)

(c) The National Youth Fund is running a seminar for young entrepreneurs where Ann and Ben are expected to participate.

With the aid of truth tables represent the following:

(i) That Ann will attend the training.   (1 mark)

(ii) That Ann does not attend the training.   (1 mark)

(iii) Both Ann and Ben will attend the training.   (3 marks)

(iv) Both Ann and Ben do not attend the training.   (3 marks)

(d) While powering a computer, a user realised this message on the screen:

"Non-system disk or disk error".

"- - - - and strike any key when ready".

(i) State two causes of such an error.   (2 marks)

(ii) Outline three remedies for fixing the problem mentioned in (d) (i) above.   (3 marks)

(Total: 20 marks)

QUESTION THREE

(a) You are in charge of computing, networks and information technology (IT) in a small company with 20 employees. The company uses personal-based networked computers and most of the employees have laptops solely for company business use.

You have been requested to create a list of rules for the employees designed to reduce the danger of being affected by malware.

Required:
Suggest five rules that the employees should abide by. (5 marks)

(b) Describe three common types of power protection in a computer system. (6 marks)

(c) Convert the decimal number 736 into the following bases. Show all your workings:

    (i)   Binary. (2 marks)
    (ii)   Octal. (2 marks)
    (iii)   Hexadecimal. (2 marks)

(d) Identify three functions of computers in the insurance industry. (3 marks)

(Total: 20 marks)

QUESTION FOUR

(a) A large library intends to replace the current manual system for the issue and control of books with a computer based database system.

    (i)   Explain the term database. (1 mark)

    (ii)   Identify two tables that could be created. (2 marks)

    (iii)   Using any of the tables created above, indicate three fields that should be included, showing the primary key. (3 marks)

    (iv)   Explain two benefits of a primary key. (2 marks)

    (v)   Giving two reasons, suggest the most suitable method of organising records created in this application. (4 marks)

(b) Outline two tasks performed by a systems programmer. (2 marks)

(c) Examine three reasons why virtual memory is important in a computer system. (6 marks)

(Total: 20 marks)

QUESTION FIVE

(a) Outline three advantages of using SD memory cards as a backup media. (6 marks)

(b) Describe the following characteristics of a computer storage device:

    (i)   Mutability. (2 marks)
    (ii)   Volatility. (2 marks)
    (iii)   Addressability. (2 marks)

(c) Two college students carried out a survey in a local village. Out of 100 people, they found out that 72 people can speak Kiswahili, 43 can speak English but 5 people can neither speak in English nor Kiswahili.

Required:
    (i)   A Venn diagram to represent the above information. (3 marks)

    (ii)   The number of people who can speak in both English and Kiswahili. (1 mark)

    (iii)   The number of people who can speak in English only. (1 mark)

    (iv)   The number of people who can speak in Kiswahili only. (1 mark)

(d) Outline two advantages of implementing a batch processing system in an organisation. (2 marks)

(Total: 20 marks)

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