GOVERNMENT BILINGUAL
HIGH SCHOOL NKOLETON

NOVEMBER 2021 ADVANCED LEVEL

Subject/Code:	Computer Science 0795
Class	UPPERSIXTH
Time allowed	Two Hours

Answer all the Questions (100 marks)

1. (i) Define the term computer hardware. Give THREE examples. **(4 marks)**

(ii) You have recently acquired a second-hand PC from a friend and immediately decided to upgrade some of its internal components.

(a) Name any three of the internal components **(3 marks)**

(b) Explain ONE benefit to be derived from the upgrade of each of the components named above. **(3 marks)**

(c) State TWO safety precautions which should be observed during the upgrade. **(2 marks)**

(iii)

(a) State the meaning of each of the following in the context of data transmission: Full duplex, half duplex and simplex transmissions. **(3 marks)**

(b) Give an example of the use of each concept in (iii)a. **(3 marks)**

(c) Distinguish between synchronous and asynchronous transmission. **(2 marks)**

(i)

(a) Select an enterprise of your choice, such as a school, hospital, or brewery company. Give THREE reasons why a poorly conceived Information system can affect productivity in various sectors of the enterprise **(3 marks)**

(b) Differentiate between data and information. **(2 marks)**

(c) State as precisely as possible the role of each of the following in an information system.
People, Procedure, Hardware and Connectivity. **(8 marks)**

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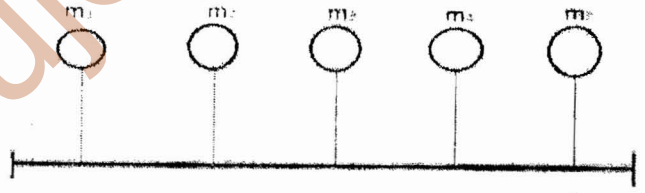
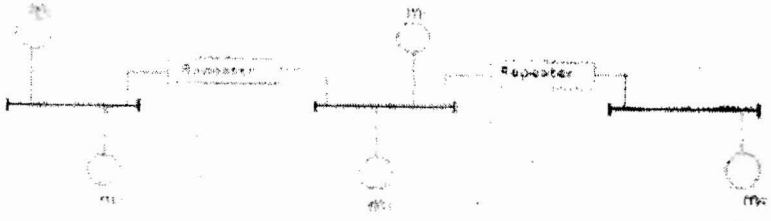


(a)



(b)

(a) Differentiate between the bus networks in figures (a) and (b) in terms of accuracy of transmission and cost installation. (2 marks)

(b) What is the major reason for this differences? (2 marks)

(c) What topology is used in the two cases above? (1 mark)

3. Let's consider the following flowchart

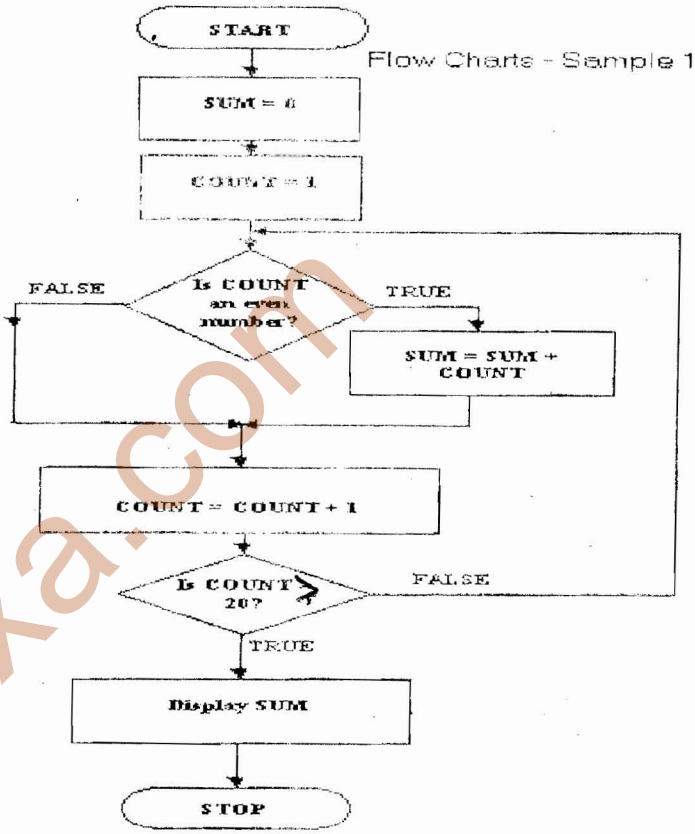
   a) Identity the programming construct available in the flowchart and explain how each of them works.

   b) Do the dry run of the flowchart

   c) What does the flowchart do?

   d) Write the corresponding pseudocode of the flowchart

   (6, 3, 2, 6 marks)



Flow Charts - Sample 1

4. A bakery accepts catering orders from customers. Most of them are regular customers and each one is given an ID number. A CUSTOMER is issued an invoice when he places an ORDER, which indicates each PRODUCT that the customer has ordered and the date that he can pick up his products. At the order taking counter the bakery displays a list of products that it produces.

   - At least one customer **has placed** many orders,
   - At least one order **contains** many order details,
   - At least one product **appears in** many order details.

   Details of the orders are to be stored in a database using the following four relations.

   - Customer (Customer ID, Customer Name, Gender, Telephone Number)
   - Product (Product ID, Product Name, Unit Price)
   - Orders (Order ID, Order Date, Customer ID)
   - Order Details (Order ID, Product ID, Quantity Ordered, Expiry Date)

   (i) These relations are in **Third Normal Form.**

   (a) What does this mean? (2 marks)

   (b) Why is it important that the relations in a database are in Third Normal Form? (2 marks)

(ii) Draw an Entity-Relationship diagram to show the degree of the relationships that exist between the entities. (4 mark

(iii) Write a Data Definition Language (DDL) statement to create the Customer relation, including the key field. (2 mar

(iv) The company wants to send letters to customers to advertise a new product. The letters must be sent to all custo A customer's ID, name and telephone number must be included in each letter. Write a SQL query that will fi data needed to produce the letters. (2 ma

(v) The customer named 'Atangana Paul' is to be renamed 'Atanga Paul'. Write a SQL statement to update the the Customer table to reflect this change. (2 m

(vi) Define DBMS and give TWO examples of DBMS (3 m

5. (i)(a) Sketch the Von Neumann computer model, identify its block components. (5 mark

(b) Explain the Fetch-Decode-Execute cycle in computer architecture, give at each stage the block component identify in (a) that are involved. (6 mar

(c) You want a computer whose only task is to calculate average. The number are given one after the other and th average of the numbers is calculated. Does this computer need a central memory? Why or Why not? (4 ma

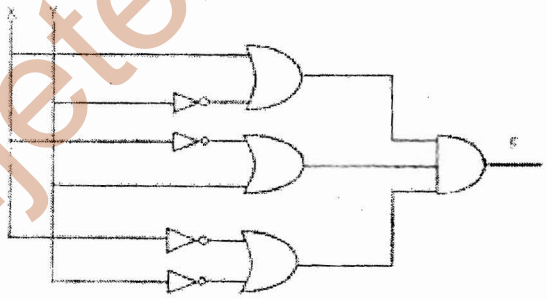
(ii) (a) What is the purpose of the RAM in a computer? (2 ma

(b) Why can we not use ROM instead of RAM? (3 ma

6. (i) (a) State the Associative laws of Boolean algebra for the AND and OR operations. (2 mark

(b) Use truth tables to verify the laws in (a) (6 mark

(ii) (a) Write in terms of X and Y the equivalent Boolean expression for F in the following logic circuit



(4 m

(b) Define each of the following terms as used in computing: Bits, Byte and Word. (4 m

(c) What is two's complement of the binary number 0011? (2 r

(d) Give TWO reasons why the computer represents information in binary. (2 r

GOOD LUCK!!!

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