

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION
FORM SIX MOCK EXAMINATION SOUTHERN ZONE
(MTWARA AND LINDI)

136/1

COMPUTER SCIENCE 1
(For Both School and Private Candidates)

TIME: 3 HOURS

2024

Instructions

1. This paper consists of two sections A and B with a total of **ten (10)** questions.
2. Answer **all** questions in section A and any **two (02)** questions from section B.
3. Section A carries **seventy (70)** marks and section B carries **thirty (30)** marks.
4. Except for diagrams that must be drawn in pencil, all writing should be in blue or black ink.
5. Cellular phones and any unauthorized materials are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

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This paper consists of three printed pages

SECTION A (70 MARKS)Answer **All** questions from this section.

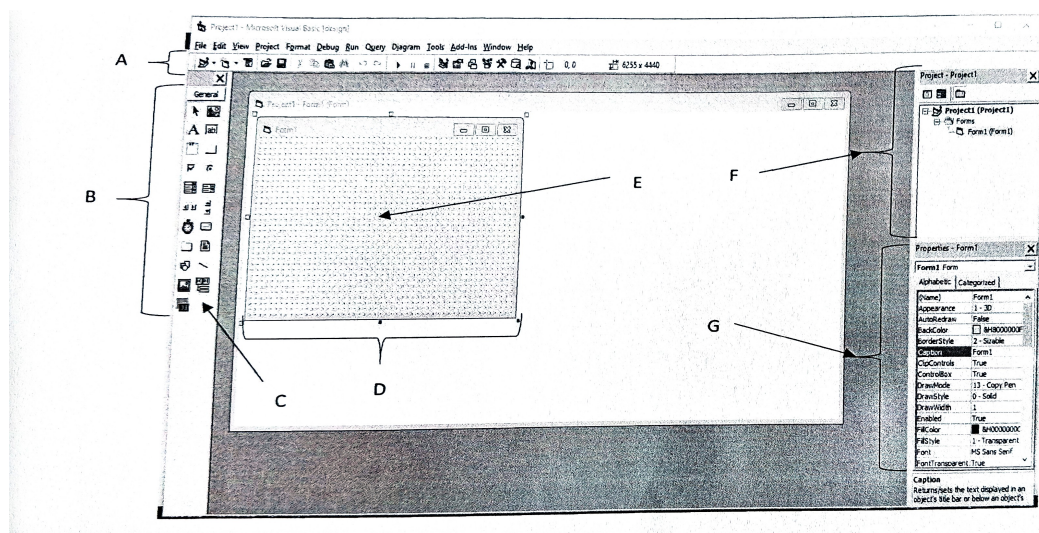
1. (a) Mr. Daudi Mapunda experienced some unusual messages, loss of files and abrupt power off on his computer system. As an IT expert explain to him the following;
- (i) The possible reason for the problem. (01½ marks)
 - (ii) Way to solve the problem. (01½ marks)
 - (iii) Mention two possible software that can help to handle the problem. (02 marks)
- (b) MAWENZII secondary school keeps a spreadsheet of monthly test results in four subjects. Study the following worksheet and answer the questions that follows;

	A	B	C	D	E	F	G	H
1	Students details and Marks							
2	Name	Class	Maths	Science	IT	English	Average Mark	Pass/Fail
3	Allen	11A	33	24	19	44	30	FAIL
4	Dyos	11B	41	54	70	31	49	PASS
5	Kegg	11A	82	69	57	52	65	PASS
6	Khan	11C	44	21	50	85	50	PASS
7	Kolacz	11A	73	51	73	51	62	PASS
8	Lenski	11B	48	41	40	47	44	FAIL
9	Peruza	11C	87	72	64	61	71	PASS
10							Total Passed	5
11	Total marks for all subjects				1484	Total failed		2

Questions:

- (i) Write the function used to calculate average mark of students in cell G6 (01 mark)
- (ii) State the expression that would be used in cell A10 to obtain the least English mark. (01 mark)
- (iii) Noted that the average mark for pass was 45 and above, by using IF function write the function entered in cell H3 to display results of “PASS” or “FAIL” (01 mark)
- (iv) Write the function that used to calculate the number of students failed the monthly test in H11 (01 mark)
- (v) Distinguish between filtering and sorting (02 marks)

2. (a) What is binary system? (01 mark)
- (b) Convert the following decimal number to its binary equivalent.
- (i) 121_{10} (02 marks)
- (ii) 26.25_{10} (02 marks)
- (c) Convert the binary number to its decimal equivalent
- (i) 1111001_2 (02 marks)
- (ii) 11010.01_2 (02 marks)
- (d) Find the 2's complement of the following number system
- (i) 36_{10} (01 mark)
- (ii) 247_{10} (01 mark)
3. Mr. Mwinuka was using his desktop computer to access network materials. His computer had no access with Wireless Fidelity however his friend told him that it is connected using Ethernet cable thus why he can access network resources. As an IT expert respond to this;
- (i) Tell him network device that allows him to be connected. (01 mark)
- (ii) List and explain one function for each of two devices that are important in network connectivity. (04 marks)
- (iii) He was letter experienced signal strength decrement due to long cables connection. What is the technical terminology for this situation? (02 marks)
- (iv) Explain three factors to consider when choosing network topology. (03 marks)
4. (a) Name parts of the Visual Basic Integrated Development Environment (IDE) window as given bellow and give the purpose of E (08 marks)



- (b) Write down all necessary steps to start Microsoft Visual Basic 6.0 program (02 marks)

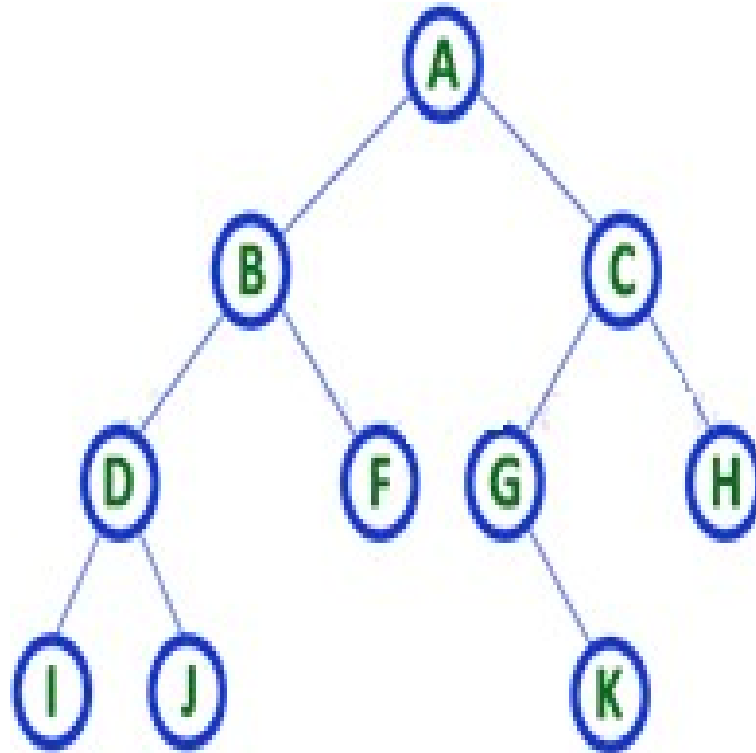
5. (a) Differentiate between Tree and Binary tree as used in data structure.

(02 marks)

(b) Mr. Masumbuko wanted to create a program for organising student's data dynamically. Name any two kinds of data structures that can help him to achieve the task.

(02 marks)

(c) Consider the following Binary tree diagram and answer the questions that follows.



(i) Write down the pre-order traversal

(01 mark)

(ii) Write down the in-order traversal

(01 mark)

(iii) Write down the post-order traversal

(01 mark)

(d) List down the root node, parent nodes and leaf nodes from the above binary tree.

(03 marks)

6. (a) With an example in each case distinguish Procedural programming languages and Object Oriented Programming languages.

(02 marks)

(b) What is recursive functions in programming language?

(02 marks)

(c) Write C++ Program to accept one integer value from the user and check if it is positive, a program finds its factorial (use recursive function) and if it is negative it should display a message "Enter only positive integer value".

(06 marks)

7. (a) Write down circumstances to use class selector and id selector in Cascading Style Sheet (CSS).

(02 marks)

(b) Explain the importance of < div > tag in HTML.

(02 marks)

- (c) Write down codes for Html form with two elements username and password. Using onclick event, use javascript codes to validate username to only accept 10 characters and password to accept characters not less than eight. Note: A program should display an appropriate message in case validation is violated when send Button is clicked. **(06 marks)**

SECTION B (30 Marks)

(Answer only **two (2)** questions from this section)

8. Computer security aims at ensuring all computer resources becomes safe and available when needed. However it is very difficult to achieve total computer security due to technological changes. One of the major tool used to at least maintain data and information security is compliance on principles and policies. Explain briefly five principles of computer security. **(15 marks)**
9. Normalization in database management is a vital organ to reduce data inconsistency to improve data organization. Explain three (3) functional dependencies and three (3) anomalies that acts as main problem in DBMS. **(15 marks)**
10. Explain three ways in which ICT can affect human health and three possible solutions. **(15 marks)**

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