THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

036/1 **COMPUTER STUDIES 1**
(For School Candidates)

TIME: 3 Hours *Wednesday afternoon 24/10/2007*

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B and **four (4)** questions from section C.
3. Show all the steps in your working, giving answers at each stage.
4. Electronic calculators are **not** allowed in the examination room.
5. Cellular phones are **not** allowed in the examination room.
6. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (20 Marks)

Answer **all** questions.

1. For each of the items (i) – (x) choose the correct answer from among the given alternatives and write its letter beside the item number.

(i) The first large – scale computer ever developed is the
- A IMB 701 and EDVAS
- B EDVAC
- C LAPTOP
- D Mark II
- E UNIVAC

(ii) Development of standardized programming language featured prominently during
- A first generation computers
- B second generation computers
- C third generation computers
- D fourth generation computers
- E fifth generation computers.

(iii) The IF statement is used when
- A a series of steps are to be executed several times
- B a series of steps are to be executed a given number of times
- C a series of steps are to be executed under a certain condition
- D one or more statements are selected for execution when a certain condition is met
- E one or more statements are to be executed until a certain condition is met

(iv) A program is written in high – level language. Which of the following statements is true?
- A Each instruction in the program represents a number of machine instructions.
- B It is written in binary
- C It does not need to be translated before execution
- D It is translated by an assembler before execution.
- E The language is called "high – level" because it is difficult to learn

(v) Which subroutine will be executed as a result of the following statement? Assume that count = 5 and ANGLE = 5

```
IF COUNT = 5
THEN
  IF ANGLE = 2
  THEN
      GOSUB 11
ELSE
    GOSUB 13
```


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A The subroutine at line 11
B The subroutine at line 13
C Neither subroutine will be executed, an error message will be displayed
D Neither subroutine will be executed, but no error message will be displayed
E Both subroutines will be executed.

(vi) An arithmetic and logic unit (ALU) performs
A arithmetic computations and data transfer
B logical operations and data transfer
C control operations and arithmetic computations
D logic and control functions
E logic operations and arithmetic computations

(vii) What is an icon?
A A file, option or help menu
B A special key on the Microsoft keyboard
C An image representing a program or some other objects
D Instruction contained on notepad
E A component of a computer that interprets instructions

(viii) How is hardware different from software?
A Hardware is composed of physical devices
B Software must always be read from disck before it is used
C Hardware cannot perform logic operations, software can
D Software uses less electricity
E Hardware is more reliable than software

(ix) A programmer
A is an expert using Microsoft office
B designs sequence of instructions for computer execution
C is an expert at managing all aspects of a computer centre
D operates mainframe computers
E is a computer sales person

(x) What is Excel used for?
A Graphics editing
B Database manipulation
C Word processing
D Desk top publishing
E Spreadsheet calculations

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2. Match the items in list A with the responses in list B by writing the letter of the corresponding response beside the item number.

LIST A

(i) RAM
(ii) Procedure language
(iii) A set of program instructions
(iv) Allows programs to run in a computer without human intervention
(v) Rules that define structure of statements in a program
(vi) Recording information on a magnetic tape
(vii) A utility program which supplies synonyms and antonyms
(viii) At least two processes sharing CPU and memory in one computer system
(ix) Program written for destructive purposes
(x) LAN

LIST B

A Computer network which is confined in a small area
B Third generation programming languages
C Stores all data and instructions required for current work
D Code
E Record
F Sequential recording
G Bootstrap
H Application software
I Syntax
J Thesaurus
K Grammatical rules
L Multiprocessing
M Modem
N Fourth generation languages
O Multiprogramming
P Line recording
Q Virus
R Spreadsheets
S Computer network that covers a large area
T OS

SECTION B (40 Marks)
Answer **all** questions

3. (a) Define the following terms:
(i) Analog computer
(ii) Digital computer

(b) What do the following abbreviations stand for?
(i) ROM
(ii) RAM

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4. (a) Draw a DO – WHILE flow chart
(b) Define an array

5. Write LET statements to perform the indicated tasks
(a) Reduce the value assigned to L by 5
(b) Assign the string constant "WINDOW" to Y
(c) Finding the sum of three numbers
(d) Find the product of A and B

6. Write down four features of an assembly language

7. (a) Define a program and programming
(b) What is a string variable?

8. Mention four computer hardware components and give one example for each

9. What are the differences between
(a) Bugs and debugging?
(b) Virus and a worm?

10. (a) Distinguish special – purpose from general-purpose software.
(b) Give one advantage and one disadvantage of general-purpose software

11. List two differences between local area network and wide area networks.

12. (a) What is system software?
(b) Mention three functions of system software

SECTION C (40 Marks)

Answer **four (4)** questions from this section.

13. (a) Dry run the following nested FOR/NEXT loop and write down the output

```
10 FOR i = (3*4) TO 1 STEP -4
20     FOR j = 2 TO 1 STEP -1
30         PRINT i, j
40     NEXT j
50 NEXTi
60 END
```

(b) Define a pseudocode

(c) Differentiate a numeric variable from a string variable

14. (a) Write short notes on the following

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(i) DATA statement
(ii) READ statement
(iii) RESTORE statement

(b) Given the following BASIC program

```
10 READ A, B
20 RESTORE
30 READ C
40 RESTORE
50 READ D, E, F, G
60 DATA 1, 2, 3, 4, 5, 6
```

What values will be assigned to A, B, C, D, E, F and G?

15. (a) Define the following terms:
(i) Programming language
(ii) Flowchart
(iii) Time – sharing

(b) In a retail store a clerk is paid a commission on each sale. If the sale is T shs.150,000 or more the commission is 4%, otherwise the commission is 2%. In a flowchart describe the logic required to compute the commission, from the point of sale to the commission calculation.

16. (a) Write a LET statement that will assign gross profit to 75% of sales minus 125,000.

(b) Correct errors in the following LET statements:
(i) 100 LET X +Y = Z 100
(ii) 200 LET P = $500G

(c) Write a LET statement that will assign the date
21 – 12 – 1996 to the string D$

(d) Write a PRINT statement that will instruct the computer to print values of the variables
A, B, C, D, E, F and G on one line.

(e) Given the following lines

```
20  A  =  100
30  B  =  200
40  C  =  300
```

What is the exact output that will be printed by the computer for the following line?

90 PRINT A↑.5, A↑½

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17. (a) Write the general form of a FOR/NEXT loop

(b) Given the following BASIC program

```
10  REM SUMMING PROGRAM
20  LET S = 0
30  FOR Y = 1 TO 5
40  INPUT Y
50  LET S = S + Y
60  NEXT Y
70  PRINT "Sum is" S
80  END
```

(i) How many types of errors are three in the program?
(ii) What will happen to the program if numbers entered are less than 5?
(iii) What will happen to the program if numbers entered are equal or greater than 5?
(iv) Write the correct version of the program that works for all values

18. (a) What steps are followed in setting up a counter for loop control?

(b) Why can't zero be used as a step value in the FOR/NEXT loop?

(c) What input statements are available in BASIC? Explain

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