THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

ADVANCED CERTIFICATE OF SECONDARY EDUCATION

EXAMINATION

136/1 **COMPUTER SCIENCE 1**

(For Both School and Private candidates)

Time: 3 Hours **Year: 2014**

Instructions

1. This paper consists of sections **A** and **B** with a total of **thirteen (13)** questions**.**
2. Answer **all** questions in section **A**, and **two (2)** questions from section **B**.
3. Section **A** carries **sixty (60)** marks and section **B** carries **forty (40)** marks.
4. Non-programmable calculators may be used.
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).

SECTION A (60 marks)

Answer **all** questions in this section

1. (a) Explain the concept of bus topology and its advantages and
   (b) Describe types of transmission media by giving examples for each type.
2. (a) Convert hexadecimal number $B29_{16}$ to its decimal equivalent,
   (b) Convert 101.111102 to its decimal equivalent
   (c) Use Boolean laws of algebra to prove the Boolean expression $A + \overline{A}B = A + B$
3. (a) Eescribe three methods that a programmer can use to make C++ code understood to allow the computer engineer to maintain it.
   (b) Explain why header file(s) are very important in every C++ program and
   (c) Explain the importance of **break** at the end of each switch…case statement..
4. (a) Provide the formula in cell E8 which used to work out the total money taken for "The manual" event
   (b) Write function statement which was in cell G4
   (c) Identify the cells which would be automatically updated if the value in C7 was changed to 2000
   (d) Write the formula to find maximum cost of event.
5. (a) State the type of relationship between the two tables
   (b) Draw the normalized relationship between the student's details and teacher's details in the form of entity-relationship diagram
   (c) Explain the meaning of primary and foreign keys by giving examples using the given tables.
6. (a) Explain the concept of software piracy by giving example.
   (b) Describe three measures taken to prevent data against unauthorized access.
7. (a) Explain why it will be necessary to initialize the array CONTESTANT_TOTALS () before to run the algorithm
   (b) Write a FOR loop which can be used to initialize the array

CONTESTANT_TOTALS () at the beginning of the algorithm,

(c) Explain what happens when the program based on this algorithm is executed

(d) Re-write line 12 to produce the correct result.

8. Describe three steps for planning and creating Visual Basic project.
9. Write a C++ program that reads numbers entered by a user and a program should be able to find their sum and print the average of the numbers.
10. (a) Describe four symbols used in a flowchart diagram.

    (b) differentiate pseudocode from algorithm.

SECTION B (40 Marks)

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

11. Describe eight stages of program development in their respective order.
12. Explain how the computer hardware and software including communications and networking have made automation to be possible in our daily life by referring to eight areas.
13. Describe eight factors to be considered for successful Website Development.