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: 2020**

Instructions

1. This paper consists of sections **A** and **B** with a total of **ten (10)** questions**.**
2. Answer **all** questions in section **A**, and **two (2)** questions from section **B**.
3. Section **A** carries **seventy (70)** marks and section **B** carries **thirty (30)** 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 (70 marks)

Answer **all** questions in this section

1. (a) use standard distinctive symbols to outline the main three Boolean Operators,

   (b) draw a logic gate circuit for the Boolean expression AB'+C'(A+B) and

   (c) simplify the Boolean expression f= (AB'(A+C))'+A'B (A+B'+C')', use NOR gates only to draw a logic gate circuit of the simplified Boolean expression.

2. (a) Define the term function as applied in programming languages,

   (b) Outline the roles of user defined functions,

   (c) read the block of code and then;

      (i) give the name of the function given,

      (ii) give out number of parameters used in that function,

      (iii) state if the code will perform a required task or not by giving reasons

   (d) with the aid of an example of a code statement, give two similarities and differences between 'cin' and 'cin.getlin' keywords as applied in programming languages.

3. (a) Describe the web server,

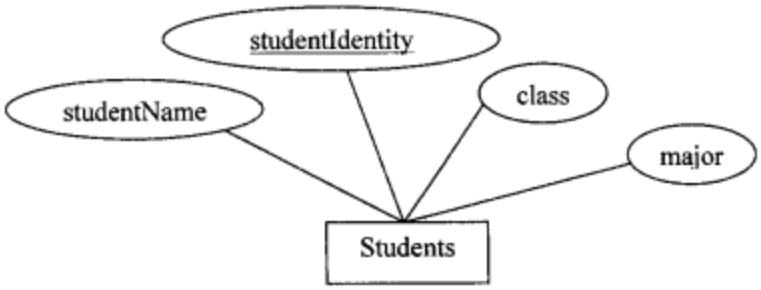
   (b) outline four steps to be followed when creating a website, and

   (c) by using HTML and JavaScript codes, develop HTML form with one input field named ''number'' and a submit button called ''process''. Check if the value entered in a form is a number and it is greater than 0''. If not alerts ''Error: Provide a number greater than 0''. If it is an even number, it alerts ''The number provided is divisible by 2''. Otherwise it alerts ''The number provided is not divisible by 2''.

4. (a) explain four elements of information systems.

   (b) explain the meaning of relational database query.

   (c) use the following entity set with its attributes to answer the questions.



i) represent entity set into its equivalent relation table,

ii) write SQL query to create students database table,

iii) write SQL insert data into students table and

iv) write SQL query required to retrieve data from students table.

5. (a) Explain three purposes of procedures in Visual Basic programs,

   (b) Mention four control structures supported by visual basic,

   (c) Explain why is it necessary to choose Standard.Exe file command from the file menu when creating a Visual Basic project, and

   (d) Write a VB program to display current date and time in a Form while showing the number of procedures used.

6. (a) Differentiate piracy from privacy terms as applied in data security,

   (b) List two ways of reducing piracy,

   (c) Explain two control measures used to enforce data and information security against an unauthorized access, and

   (d) List four points addressed by the use of copyright laws over hardware and software protection.

7. (a) Explain four common features of Graphical User Interface (GUI) available in Microsoft word.

   (b) Differentiate SUM from SUMIF functions as used in Microsoft excel.

   (c) Write the syntax of SUM and SUMIF functions.

(d) write the functions required to find the total amount from north region of the given sales table.

	A	B	C	D
1	Sales Table			
2	Date	Region	Units	Total Amount
3	24/06/2016	North	186	Tsh. 50, 592.00
4	4/6/2016	East	356	Tsh. 96, 832.00
5	2/7/2016	West	907	Tsh. 200,000.00
6	1/7/2017	South	190	Tsh. 51,000.00
7	24/07/2017	North	717	Tsh. 180,900.00
8	15/06/2016	West	550	Tsh. 149,900.00

SECTION B (30 Marks)

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

8. Draw a flowchart and write C++ program that reads a given set of integers and then prints the number of odd and even integers. The program should also generate the number of zeros.

9. Describe three classifications of data transmission media in the guided and unguided media.

10. Explain how Information and Communication Technology has brought about different career opportunities to most of Tanzanians by referring to at least six career opportunities.