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: 2018**

Instructions

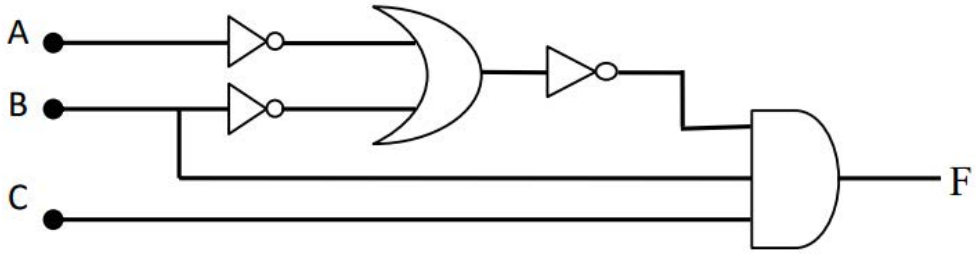
1. This paper consists of sections **A** and **B** with a total of **thirteen (3)** questions**.**
2. Answer **all** questions in section **A**, and **two (2)** questions from section **B**.
3. Section **A** carries **sixty (60)** marks and section **B** carries **forty (40)** marks
4. Non-programmable 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. Describe four categories of data which can be entered on a Microsoft Excel sheet.
2. Mention six components of the Integrated Development Environment (IDE) in Visual Basic and explain the function of IDE.
3. (a) Differentiate logic diagram from truth table.

   (b) Study the following logic diagram and to answer the questions that follow:



   Questions

   (i) With clear steps, write a simplified Boolean expression for the output "F".

   (ii) Construct the equivalent truth table for the simplified expression.

4. (a) Explain the term Pseudocode.

   (b) Study the following scenario and answer the questions that follow:

   Tanzania Youth Bank (TYB) pays 10% interest on shares exceeding Tsh. 200,000 and 2% on shares that do not meet this target. No interest is paid on deposit in the member's bank account. Using a pseudocode, design an algorithm for program that would;

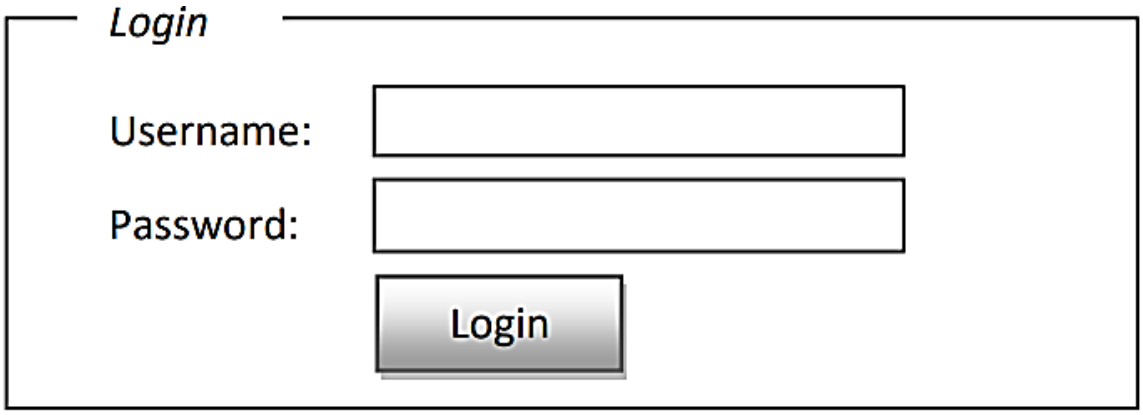
   (i) Prompt the user for shares, deposit of a particular member and the name.

   (ii) Calculate the interest and total savings.

   (iii) Display the interest and total savings on the screen for a particular member on the bank.

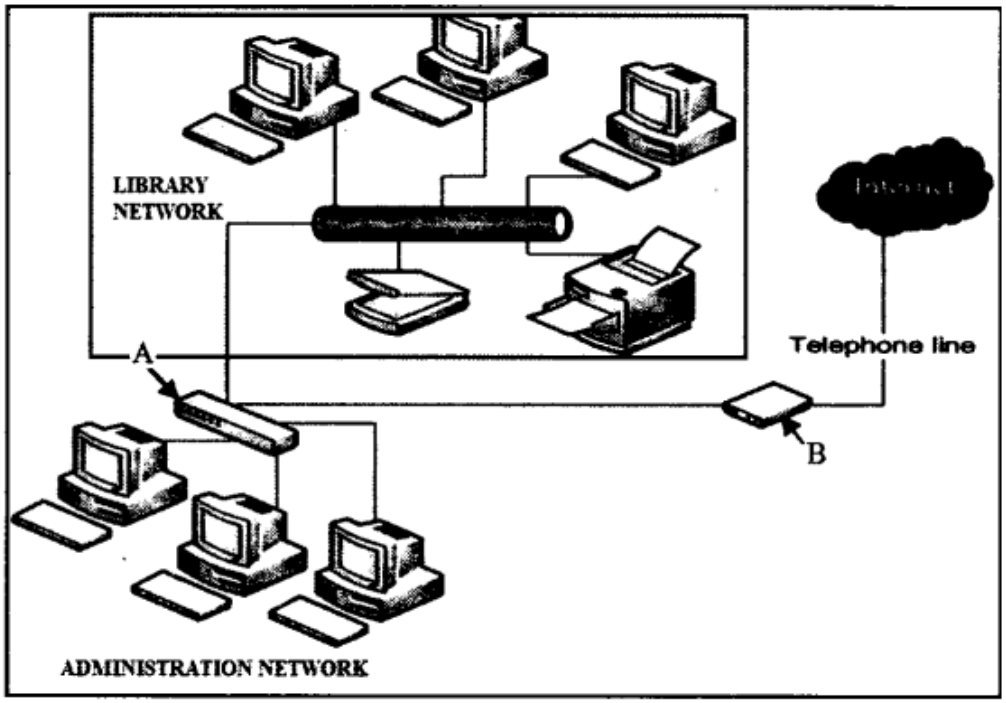
5. (a) Explain three types of HTML lists.

   (b) Provide HTML codes which generated the following login form



6. (a) Define the term wireless network.

(b) Study the following figure and answer the question that follow:



Questions:

(i) List the topologies used in the Figure studied.

(ii)Mention the names of device A and B.

(iii)Why it is necessary to have device B?

(c) Give one advantage of the topology used in administration network.

7. (a) Explain the term "requirement specifications" as used in software development.
   (b) Explain three considerations to be included in the requirement specification stage.
   (c) Describe two roles of testing phase in software development life cycle.
8. (a) Differentiate data availability from data confidentiality
   (b) Describe four physical threats to data security.
9. (a) Explain the presentation of hexadecimal number system and give the range of digits and letters used to represent hexadecimal numbers.
   (b) Convert A90F16 number system into:
      (i) its binary equivalent.
      (ii) its decimal equivalent.
10. (a) Explain the meaning of the term Information system.
   (b) Elaborate two roles of information system analyst.
   (c) Describe three main purposes of information system in an organization.

SECTION B (40 Marks)

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

11. Describe the decimal, binary, octal and hexadecimal number systems and give an example for each type.
12. Describe four problems caused by storing data redundantly in a database and to explain how the first three levels of normalization can be used to avoid data redundancy.
13. Draw a flowchart, write pseudocodes and use the *while...loop* to construct a C++ program that could:
      (i) Read a positive integer N.
      (ii) Calculate and print $N!$ Where $N! = N(N-1)(N-2)\ldots(2)(1)$.