

**COMPUTER SCIENCE**

**016**

**26/11/2018 8.30 AM- 11.30 AM**



**Rwanda Education Board**

**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2018**

**SUBJECT: COMPUTER SCIENCE**

**COMBINATIONS:**

- MATHS-COMPUTER SCIENCE-ECONOMICS (MCE)
- MATHS-PHYSICS-COMPUTER SCIENCE (MPC)

**DURATION: 3HOURS**

**INSTRUCTIONS:**

1. Write your names and index number on the answer booklet as they appear on your registration form and **DO NOT** write your names and index number on additional sheets of paper if provided.
2. Do not open this question paper until you are told to do so.
3. This paper consists of **three** sections: **A, B** and **C**.

**Section A:** Attempt **ALL** questions. (55 marks)

**Section B:** Attempt **THREE** questions. (30 marks)

**Section C:** Attempt **ONLY ONE** question. (15 marks)

4. Use only a **blue** or **black** pen.





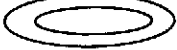
## SECTION A: ATTEMPT ALL QUESTIONS (55 Marks)

- 1) Give and explain the main components of an Operating System. (3marks)
- 2) Is it possible to Log on more than 1 user using one computer simultaneously? Explain your answer. (3marks)
- 3) Give 4 expansion cards available in the computer. (4marks)
- 4) What is int, float and char? (3marks)
- 5) Explain 3 Data Manipulation Language statements. (3marks)
- 6) (a) What is a protocol? (2marks)  
(b) Give 5 main functions of the protocols. (5marks)
- 7) Describer the friend function. (3marks)
- 8) Convert the following in Decimal number. (4marks)
  - (a)  $(1237)_8$
  - (b)  $(10101)_2$
- 9) Rewrite the following if-else segment using switch-case statement. (4marks)

```
char ch='A';
if(ch=='A')
System.out.println("Account");
if((ch=='C') || (ch=='G'))
System.out.println("Admin");
if(ch=='F')
System.out.println("Advisor");
```
- 10) What is meant by case sensitive? Is Java case sensitive? (3marks)
- 11) List any 3 objectives of a website. (3marks)
- 12) Give the syntax of declaring a structure. (3marks)
- 13) List the basic operations carried out in a linked list. (4marks)
- 14) What are the four functions of an operating system? (4marks)
- 15) What are the hardware devices used for computer graphics? (4marks)

**SECTION B: ATTEMPT ANY THREE QUESTIONS (30Marks)**

- 16) Compare the disadvantages of fiber optic cables and the advantages of twisted pair cables. **(10marks)**
- 17) (a) Name different ADO Objects. **(10marks)**  
(b) What is the difference in passing values ByRef or ByVal to a procedure?  
(c) What is the difference between list box and combo box?
- 18) Using a class, write a program to find the largest number in two number entered by the user. **(10marks)**
- 19) (a) Give at least five operators allowed in the WHERE Clause. **(10marks)**  
(b) Complete the table below:

Notation chart	Corresponding meaning in ERD
	
	
	
	
	

- 20) Among 20 values given by a user, write an algorithm to display the values which are less than their average. **(10marks)**

**SECTION C: ATTEMPT ANY ONE QUESTION (15 Marks)**

- 21) Consider the following Entities and Relationships. **(15marks)**  
Country (con-code,name,capital)  
Population (pop-code,population)  
Country & Population are related with one-to-one relationship.  
Constraints : Primary key and country name should not be null.

(a) Create a Relation Data Base.

(b) Write queries for the following

Give name and population of a country whose capital is 'Kigali'.

Count the number of countries whose population is > 6,000,000

Find the details of the country with the highest population.

Display country wise population details.

22) Write down html code that prints the following.

**(15marks)**

First Name:

Last Name:

Password:

Language Used:

☐ Kinyarwanda ☐ English ☐ French

Gender:

☐ Male ☐ Female