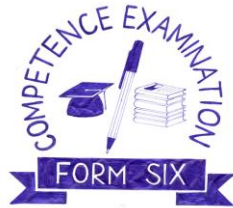


THE PRESIDENT’S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
FORM SIX COMPETENCE EXAMINATIONS (FOSCE) - 2025



CODE: 136/1

COMPUTER SCIENCE 1

TIME: 3 HOURS

27TH FEBRUARY 2025, PM

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. Cellular phones and any unauthorized materials are not allowed in the examination room.
5. Write your **Examination Number** on every page of your answer booklet(s).

SECTION A (70 Marks)

Answer **all** questions in this section.

1. (a) Briefly explain the significances of the following features in the spreadsheet application;
(i) Macros. (4 marks)
(ii) Goals seek. (6 marks)
(b) Write the procedures used to create a feature explained in part (a) (i) above. (6 marks)
2. (a) Give a reason why Boolean algebra cannot be regarded as other normal standard mathematical algebra? (2 marks)
(b) Use Boolean laws of algebra to simplify the following Boolean expression:
 $Z = (A + B' + C')(A + B'C)$ (3 marks)
(c) Draw a logic gate circuit from the Boolean expression function given below:
 $AB' + C'(A + B)$ (5 marks)
3. (a) You have been required by a TMA to construct a system that will read temperature for each day in a week, in degrees Celsius. Convert the Celsius into Fahrenheit and then calculate the average weekly temperatures. The system should output the calculated average in degrees Fahrenheit.
Required:
Write a pseudocode to implement the above program. (6 marks)
(b) Between pseudocode and flow chart, which one is more preferred than the other? Give two reasons. (4 marks)
4. (a) Keys are an essential part of relational database. Using an example in each to describe four keys applicable in database implementation. (6 marks)
(b) You have been given the following table below, use it to answer all questions that follow.

ID	C1	C2	C3
1	Red	Yellow	Blue
2	NULL	Red	Green
3	Yellow	NULL	Violet

- (i) Write a query to select rows which have "Yellow colour" in one of the columns C1, C2, or C3 but without using OR operator. (2 marks)
- (ii) Write a query to select columns which do not have colour. (2 marks)
- (iii)

5. (a) A game developer uses C++ language to build a high-performance game engine, leveraging its object-oriented features and support for both high-level abstractions and low-level hardware access. Explain two challenges a programmer may encounter when using such type of language. **(4 marks)**
- (b) Write a C++ program for the following algorithm: **(6 marks)**
- Step 1: Start
- Step 2: Enter two numbers A and B
- Step 3: Check if A is greater than B if yes go to step 4 else go to step 5
- Step 4: Print A is greater than B
- Step 5: Check if B is greater than A if yes go to step 6 else go to step 7
- Step 6: Print B is greater than A
- Step 7: Print A is equal to B
- Step 8: Stop
6. (a) Explain local variables and static variables as used in Visual Basic program. **(4 marks)**
- (b) Explain how an empty Visual Basic form can be opened. Give four steps. **(6 marks)**
7. A computer science student was asked to design a new software system to compile students' performance at his school.
- (a) Use four points to describe what he would do during requirement specification stage. **(4 marks)**
- (b) Why should he test software system before implementing it? **(2 marks)**
- (c) Analyse four levels of testing as identified in part (b) above. **(4 marks)**

SECTION B (30 Marks)

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

8. A computer science student was assigned to store data in a sequence one after another and the data is accessed from one place to another and continues to others sequentially. However, she was advised to use static and dynamic linear data structures within a memory. Why was the student advised to use both structures? Explain by giving three points in each. **(15 marks)**
9. When a company decides it needs to purchase new software for a particular purpose, it will need to evaluate different packages based on specific criteria. Explain five criteria for selecting software. **(15 marks)**
10. As a computer expert, you are confronted by viruses, hacking, fraud and software piracy issues. Give details of the nature of the problems and the means by which you are going to minimize the risks that they bring into your computer systems. **(15 marks)**