Instructions to Candidates:
You should have the following for this examination
- Answer Booklet
This paper consist of FIVE questions
Answer question ONE (COMPULSORY) and any other TWO questions
Maximum marks for each part of a question are as shown
This paper consists of TWO printed pages

Question One (Compulsory)

a) What is computer programming and list the FOUR tasks performed by the program. (6 marks)

b) Algorithms can be represented in four different ways. Mention them. (4 marks)

c) State the FOUR advantages of a flow chart. (4 marks)

d) State and explain the THREE types of errors encountered in writing a computer program. (6 marks)

e) Differentiate between expression and statement giving examples. (3 marks)
f) Write a short program code in C++ using while loop that will display 4, 3, 2, 1 on the screen.

(7 marks)

Question Two

a) What is data type? List the FOUR examples of data types.

(4 marks)

b) State and explain the THREE limitations of top down design.

(6 marks)

c) Write a simple algorithm in C++ using do while to display 0,1,2,3,4,5,6,7,8,9 on the screen.

(10 marks)

Question Three

a) Consider the pseudo code below where a man deposits $1000 in a bank at an interest rate of 10% per year.

Algorithm: Bank Interest Rate

Set Deposit to 1000
Print heading “YEAR DEPOSIT INTEREST TOTAL”
Set year to 1
Carry out the following when deposit is less than or equal to 2000
Add 1 to year
Set interest to 10% of deposit i.e. Deposit * 0.1 set total to Deposit + Interest
Print (year, deposit, interest, total)
Set Deposit to total (the new deposit for the next year)
Print (“The total first exceeds $2000 at the end of year”, Year)
Stop

Draw the flow chart of the above pseudo code.

(10 marks)

b) What is pseudo code? And mention FIVE guidelines for designing a good pseudo code.

(7 marks)

c) Mention at least THREE programming languages common in the market today.

(3 marks)

Question Four

Consider problem below for converting a given temperature in Celsius (C) into a temperature in Fahrenheit (F) using \( F = 32 + \frac{9}{5}C \)

When \( C = 0 \) then stop

a) Write a pseudo code using IF THEN statement.

(10 marks)

b) State FIVE stages that a module testing goes through.

(5 marks)

Question Five

a) List and explain at least EIGHT quality requirements of good program.

(16 marks)

b) What is data obstruction? And give examples of data abstraction.

(4 marks)