



ZIMBABWE

MINISTRY OF HIGHER AND TERTIARY EDUCATION

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

INFORMATION TECHNOLOGY

SUBJECT: Programming Using C++

PAPER NO: 317/S02

MARCH/APRIL 2012 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

Answer all questions.

This paper consists of 3 printed pages.

QUESTION 1

- a) Distinguish between object oriented programming and procedural oriental programming. (6 marks)
- b) Describe the following types of programming errors
- i) Syntax error (2 marks)
 - ii) Logical error (2 marks)
- c) Identify errors in the following program statements, if there are any and give the correct statement for every statement with errors
- ```
#include <iostream.h>
#define π 3.14;
Void main ()
{
 Float radius, area
 cout >> "Enter radius of circle";
 cin << radius;
 area = π * radius * radius;
 cout<< "In the area is:" << "area";
 return o;
}
```
- (10 marks)

QUESTION 2

- a) Write brief notes on each of the following OOP terms
- i) Encapsulation (2 marks)
  - ii) Data Abstraction (2 marks)
  - iii) Inheritance (2 marks)
  - iv) Polymorphism (2 marks)
  - v) Method (2 marks)
- b) Determine the output of the following program segments
- i)

```
int x = 4;
int j = 5;
int k = j * x * 10;
cout << "x =" <<x;
cout << "\nj = "<<j;
cout << "k = << k;
```

(3 marks)

```
ii) int x = 1;
 While (x <= 50)
 {
 cout << x << " ";
 If (x % 10 == 0)
 cout << endl;
 x ++;
 }

 cout << "End of output \n";
 cout << "good luck";
```

(7 marks)

### QUESTION 3

Write a program that accepts 10 alphabetic characters into an array and bubble sort them into an ascending order. (20 marks)

### QUESTION 4

a) Explain the following file processing statements as used in C++

- i)     Ofstream fout ("<filename>") (4 marks)
- ii)    ifstream fin ("<filename>") (4 marks)
- iii)   Close () (4 marks)

b) Describe the following types of files as used in C++

- i)     Binary (4 marks)
- ii)    Text (4 marks)

### QUESTION 5

Write a program to capture name, age and mark of students in a class of 30 students.

Your program should calculate and display the average mark, the highest mark and the lowest mark.

NB: Use a **struct** to store the student details (20 marks)

.....rg/pm