



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

HIGHER DIPLOMA IN COMPTUER STUDIES

END OF SEMESTER EXAMINATIONS

APRIL/MAY 2010 SERIES

STRUCTURED PROGRAMMING (PROGRAMMING Inc)

TIME: 2 HOURS

Instructions to Candidates

Attempt **ALL** Question from Section **A** and any **TWO** Questions from Section **B**.

SECTION A : Attempt ALL Questions from this Section (30 Marks)

Question ONE (30 Marks)

- (a). Explain the following types of errors that can occur in program:
- (i). Syntax error
 - (ii). Logical error
 - (iii). Run time error
- (6 Marks)**
- (b). (i). Explain what is mean by 'comment' as applied to programming. **(2 Marks)**
(ii). Explain with an example how comment is inserted in a C program. **(1 Mark)**
- (c). Explain the term 'header file' as applied to C programming. Write C statement containing a header file. **(3 Marks)**
- (d). Explain the following:
- (i). Variable
 - (ii). Constant
 - (iii). Literal
- (16 Marks)**
- (e). State any **FOUR** primary mathematical operators used in C, giving an example of each. **(4 Marks)**
- (f). State any **FOUR** data types used in C. **(4 Marks)**
- (g). Explain what is meant by 'typecast'. **(4 Marks)**
- (h). Explain what is meant by "overloaded" operator. Give an example. **(2 Marks)**

SECTION B

Question TWO (20 Marks)

(a). Distinguish between a Binary Operator and Unary Operator giving an example of each. **(4 Marks)**

(b). State the output of the following piece of code:

```
Int i, j;  
int ans;  
i=20;  
j=6;  
ans=i/j;  
count<<ans;  
ans=20% 6;  
count<<ans;
```

(4 Marks)

(c). Rewrite the following statements using compound operators:

- (i). $a = a + 100$
- (ii). $c = c * 13$
- (iii). $d = d / 4$

(3 Marks)

(d). Write a C program using for loop to store cost of 15 items in a text file.

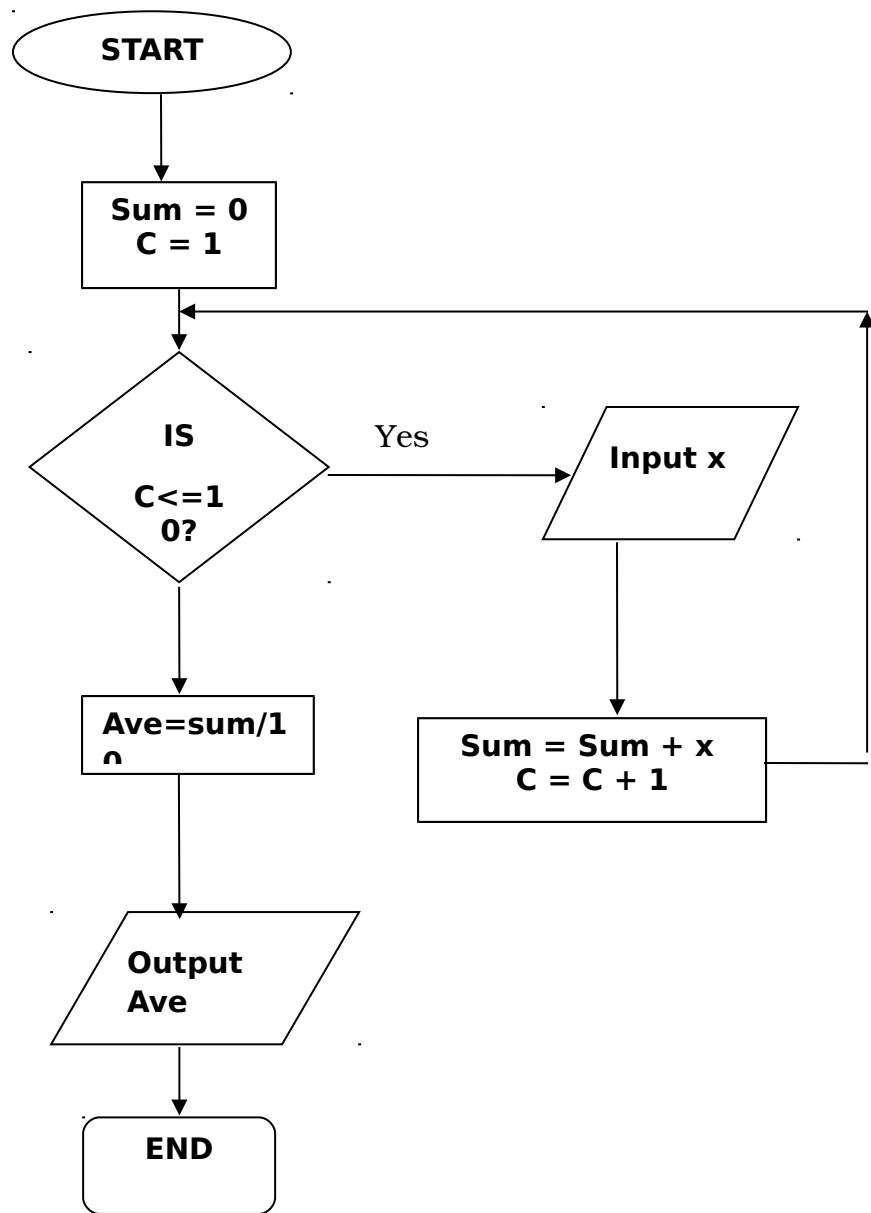
(9 Marks)

Question THREE (20 Marks)

(a). For the flow chart below write C programs using:

- (i). For loop
- (ii). While loop

(12 Marks)



(b). Explain the following operators used in C:

- (i). `&&`
- (ii). `||`
- (iii). `!`
- (iv). `!=`

(4 Marks)

(c). Explain the use of the following statements:

- (i). Break
- (ii). Continue

(4 Marks)

Question FOUR (20 Marks)

- (a). Explain the use of the following control structures as used in C programming Language:

- (i). \n
- (ii). \r
- (iii). \\
- (iv). \b

(2 Marks)

- (b). Write C code to store marks of 10 students in an array called mark. The range of marks is between 0 and 30.

(6 Marks)

- (c). If (x ==1)
 count << "choice is 1";
else if (x==2)
 count << "choice =3";
else
 count << "wrong choice";

Rewrite the above code using the switch statement.

(5 Marks)

- (d). Define function as used in C.

(2 Marks)

- (e). Write a C program containing function to find area of a rectangle.

(5 Marks)

Question FIVE (20 Marks)

- (a). Explain the following concepts:

- (i). Function prototyping
- (ii). Formal Parameter
- (iii). Value Parameter
- (iv). Typecasting
- (v). Struct

(10 Marks)

- (b). Rewrite the two C statements as a single statement to get value of year Ave

```
monthAve = dailyAve*30
yearAve=12*monthAve;
```

(2 Marks)

- (c). Replace If-else by conditional operator:
if (price>5000)
 saleDiscount = 0.12;
else
 saleDiscount= 0.08;

(2 Marks)

- (d). Write a C program to read 50 integer values and count the values that are odd or even.

(6 Marks)