



**INSTITUTE OF
ADVANCED
TECHNOLOGY**

DIPLOMA EXAMINATIONS 2015

**SEMESTER 1 EXAMINATIONS FOR THE DIPLOMA IN ICT
MANAGEMENT**

DICT 0103: INTRODUCTION TO PROGRAMMING IN C

SECTION A: COMPULSORY QUESTION {30 MARKS}

QUESTION 1

a) Define the following terms as used in computer programming

- i. Variable
- ii. Compiler

(2 Marks)

b) List and explain any four data types used in c

(4 Marks)

c) Explain the use of each of the characters below.

(2 Marks)

- I. \n
- II. \t

d) What will be the output when the following code snippet is executed

```
int X, Y, Z;
```

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```
X=10;  
Y=X++;  
Z=++X;  
printf("%d \n", Y);  
printf("%d \n", Z);
```

(2 Marks)

- e) Write a c program that implements a while loop to display all even numbers between 0 and 10

(4 marks)

- f) Illustrate the syntax for

- I. Declaring an array
- II. Declaring a struct

(2 marks)

(2 marks)

SECTION B: ANSWER ANY TWO QUESTIONS {20 MARKS EACH}.

QUESTION 2

- a) Write a simple c program that prints out the message “welcome to c programming “
(3 marks)
- b) Outline any four key words used in C
(2 marks)
- c) Explain the main parts of a c program
(5 marks)

QUESTION 3

- a) Define the term function and illustrate the syntax used to declare a function
(3 marks)
- b) Write a function “*interest*” that takes in three arguments “*principal*”, “*rate*” and “*duration*”, and uses the three to calculate and return the interest.
(4 marks)
- c) List any three advantages of using functions in a program
(3 marks)

QUESTION 4

- a) Given that a = 5, b = 8, c = 11 and d = 15, what do the following expressions evaluate to in C programming?
- i. $(b \% a) * (d / 3)$
(1 Mark)
- ii. $(d >= 5) \&\& (c == d)$
(1 Mark)
- iii. $(a != 5) || (b <= c)$
(1 Mark)
- b) Write a c program that requests a user to key in the bonga points that they have accumulated and the displays the reward they have qualified for (use the table below as a guide)

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Bonga points	Reward
0 -199	null
200 - 499	8 free sms's
500 - 999	5 free minutes
1000 - 4999	Nokia 1100
5000 and above	Safaricom modem

(7 marks)

End of Exam