

*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**(KIBU)**

**UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR**

**SUPPLEMENTARY/SPECIAL EXAMINATIONS  
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR DIPLOMA IN  
INFORMATION TECHNOLOGY**

**COURSE CODE : DIT 058**

**COURSE TITLE : INTRODUCTION TO  
PROGRAMMING**

**DATE: 17/10/2018**

**TIME: 3.00P.M. – 5.00P.M.**

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**INSTRUCTIONS TO CANDIDATES**

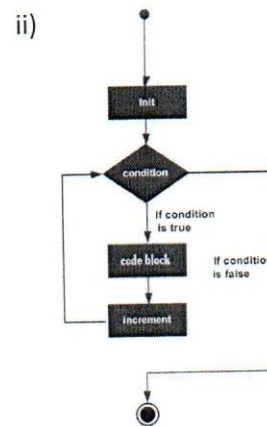
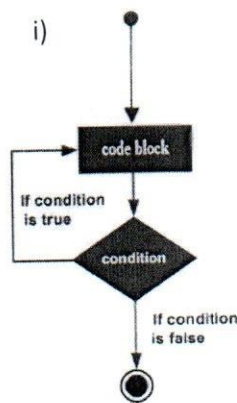
**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### Question One

a) When it comes to procedural programming, we usually demonstrate and implement the programming techniques using the C programming compiler tool.

- i.) What do we mean by procedural Programming? [2 Marks]
- ii.) Why learn procedural programming? [5 Marks]
- iii.) Why C and not B Programming? [3 Marks]

b) Write a simple program that implements the following flow charts: -



[6 Marks]

c) Write a program that outputs the following values.

1	2	3	4	5
2	4	6	8	10
3	6	9	12	15
4	8	12	16	20

[8 Marks]

### Question Two

i) Using relevant examples, define the following terms as used in programming: -

a. Variable

c. Function

b. Data type

[6 Marks]

ii) Using an example, differentiate between a function declaration and a function definition

[6 Marks]

iii) Explain any three benefits of a function

[6 Marks]

### Question Three

- a) Using relevant examples, explain three control constructs that are available in C programming [6 Marks]
- b) Using flowchart diagrams, show how data flows through the control constructs explained in i) above. [6 Marks]
- c) Consider the following program:

```
#include <stdio.h>
```

```
void main(void){
```

```
    int a=5, b=8, c;
```

```
    c = (a > b) ? a : b;
```

```
    printf("The output value is %d\n\n",c);
```

```
}
```

- i) Which control construct does this program demonstrate? [2 Marks]
- ii) If a=5 and b=8 what would be the output? [1 Mark]
- iii) Re-write the program using an alternative construct [3 Marks]

### Question Four

- i) Using two programs, demonstrate two ways in which constants are declared in C programming. [4 Marks]
- ii) Consider the following program:

```
int main()
```

```
{
```

```
    int i, j, N
```

```
    printf("Enter number of columns:");
```

```
    scanf("%d",&N);
```

```
    columns=1;
```

```
    for(i=1;i<N*2;){
```

```
        for(j=1;j<=columns;){
```

```
            printf("\t");
```

```
            j++
```

```
        }
```

```

    i++
    if(i < N) {
        columns++;
    }
    else {
        columns--;
    }
    printf("\n");
}
}

```

- i) The program has syntax errors. What do we mean by syntax errors? [1 Mark]
- ii) Identify the errors [3 Marks]
- iii) If the errors are corrected, what is the output of the program? [2 Marks]
- iv) Write a program that would take values in ascending order and output them in descending order as shown below.

```

Enter your value: 1
Enter your value: 2
Enter your value: 3
Enter your value: 4
Enter your value: 5
Enter your value: 6
Enter your value: 7
Enter your value: 8
Enter your value: 9
9      8      7
6      5      4
3      2      1
Press any key to continue_

```

[8 Marks]

### Question 5

Give ANY THREE materials necessary for a C program to be coded and run. [3 Marks]

Why is programming important? [5 Marks]

State the meaning of the following c programming expressions:

- |          |   |
|----------|---|
| a) %6.5F | d) printf("n=%d\n",n);                      |
| b) %3d   | e) /* printf("Hello candidate")*/ [5 Marks] |
| c) x+=1  |   |

Write a C statement that allows an input of type *float* from the keyboard and stores the value entered in a variable named *Num\_Value* of type *float*. [2 Marks]

Rewrite the following program using the *for* loop

```
int x, sum;
while (n < 7) {
    printf("n = %d\n", n);
    n++;
    printf("Now n = %d\n", n);
}
```

[3 Marks]