THE POLYTECHNIC, IBADAN
DEPARTMENT OF COMPUTER STUDIES
SECOND SEMESTER EXAMINATION 2020/2021 SESSION

COURSE CODE: COM 121
COURSE TITLE: INTRODUCTION TO C PROGRAMMING
CLASS: ND I COMPUTER (FT & DPP)
TIME: 2 ½ HOURS
INSTRUCTION: ANSWER <u>QUESTION ONE(1)</u> IN SECTION A AND ANY OTHER <u>FOUR(4) FROM</u> SECTION B.

SECTION A

QUESTION ONE

a. Write <u>TRUE OR FALSE</u> in response to the following questions
   i. When a variable is created in C, a memory address is assigned to the variable. T
   ii. In C, code statements must end with a colon. F
   iii. C was first implemented on the digital equipment corporation PDP-11 in 1970. F
   iv. The instructions in machine language must be in binary digits. T
   v. C is a successor of B language. T
   vi. Scanf() function is used for output. F
   vii. In C, memory can be freed at any time by calling the free() function. T
   viii. Keywords can be used for any other purpose. F
   ix. Every C program must have two main functions. F
   x. C is the most widely used system programming language. T
   xi. Files created with text editors are called the source files T
   xii. In C, it is possible to inherit class properties and functions from one class to another. F
   xiii. To store a word/sentence, you declare a variable of the type 'string'. T
   xiv. A C program that prints three lines of output *must* contain three printf statements. F
   xv. All variables must be declared and given a type before they are used. T
   xvi. Arrays are used to store multiple values in different variables. T
   xvii. main is a legal identifier in C. T

b. What is the output of the following code snippet?

```
#include <stdio.h>
int main() {
  printf("I am a student of computer science!\nI am writing com 121
examination.\nI promised to be obedient and respectful.\nI am born to excel,
so help me God.");
  return 0;
}
```

SECTION B

QUESTION TWO

a. Given the following operators, classify them into logical, arithmetic, assignment and comparison.

i.	%	ii.	+=	iii.	!	iv.	*	v.	/=	vi.	--	vii.	!=
viii.	*=	ix.	&&	x.	==	xi.	%=	xii.	>	xiii.	<=	xiv.	||

7 marks

b. What are the following conditional statements used for?

   i. If   ii. Else   iii. Else If   iv. Switch   **4 marks**

c. Write the general syntax of an IF statement in C language.   **1 mark**

QUESTION THREE

a. Briefly explain the following computer languages

   i. Machine language   ii. Symbolic language   **2 marks each**

b. State **three(3)** advantages of symbolic language and **three(3)** disadvantages of machine language.   **6 marks**

c. Learning in English language requires the following basic steps.

   Alphabet ----------------words ------------------------sentences -----------------paragraph. Write its equivalent in learning C program.   **2 marks**

QUESTION FOUR

a. What are format specifiers?   **1 ½ marks**

b. Consider the data types given in the table below,, give their description and format specifier. **4 ½ marks**

Data type	Description	Format specifier
int	Stores whole numbers without decimals	i.
float	ii.	iii.
double	iv.	v.
char	vi.	%c

c. Write a C program that will add three numbers and display its output.   **3 marks**

d. Create a variable named myNum and assign the value 50 to it.   **1 mark**

e. Enumerate any **two (2)** rules required for constructing identifiers.   **2 mark**

QUESTION FIVE

a. Briefly explain any **five(5)** key features in c programming that you know   **7 ½ marks**

b. use the code snippet given below to answer the following questions

   i. Find the error and debug it   **3 marks**

   ii. What will the output be after it has been debugged   **1½ marks**

```
#include<sdio.h>

main()
{
  int a = 5, b = 3, c = 4;

  printf("a = %d, b = %d\n", a, b, c)
```

QUESTION SIX

a. Briefly explain what you understand by C tokens   **2 marks**

b. In a tabular form, highlight the **six(6)** types of C tokens you know and give **two(2)** examples for each of them .   **9 marks**

c. What is compilation?   **1 mark**