

Professional Course Examination, May 2023

(2nd Semester)

BACHELOR OF COMPUTER APPLICATIONS

(Programming Language through C)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A—OBJECTIVE)

(Marks : 25)

SECTION—I

(Marks : 15)

A. Tick (✓) the correct answer in the brackets provided: $1 \times 10 = 10$

1. What is right way to initialization of array?

(a) `int num[6] = {2, 4, 12, 5, 45, 5};` ()(b) `int n{} = {2, 4, 12, 5, 45, 5};` ()(c) `int n{6} = {2, 4, 12};` ()(d) `int n(6) = {2, 4, 12, 5, 45, 5};` ()

2. The symbol `||` is used to represent logical

(a) AND ()

(b) OR ()

(c) NOT ()

(d) NAND ()

3. The `?:` operator is known as

(a) arithmetic ()

(b) conditional ()

(c) binary. ()

(d) loop ()

4. The field specification for reading an integer number is

(a) `%c` ()

(b) `%f` ()

(c) `%lf` ()

(d) `%d` ()

5. What will be the result of $9\%2$ in a C program?

(a) 0 ()

(b) 1 ()

(c) 2 ()

(d) 4 ()

6. What is the output of the following?

```
int main()
{
    int x=10;
    {
        int x=0;
        printf("%d", x);
    }
    return 0;
}
```

(a) 10 ()

(b) Compilation error ()

(c) 0 ()

(d) Undefined ()

7. Which of the following is the correct syntax to send an array as a parameter to function?

(a) `func(&array);` ()

(b) `func(#array);` ()

(c) `func(*array);` ()

(d) `func(array[size]);` ()

8. What is the output of the following program?

```
#include<stdio.h>
int main()
{
    char c;
    FILE *fp;
    fp=fopen("demo.txt", "r");
    while((c=fgetc(fp))!=EOF)
        printf("%c", c);
    fclose(fp);
    return 0;
}
```

- (a) It will print the content of file till it encounter new line character ()
- (b) It will print the content of file demo.txt ()
- (c) Compilation error ()
- (d) Undefined ()

9. A pointer is

- (a) a keyword used to create variables ()
- (b) a variable that stores address of other variable ()
- (c) a variable that stores address of an instruction ()
- (d) All of the above ()

10. The size of a union is determined by the size of the

- (a) first member in the union ()
- (b) last member in the union ()
- (c) biggest member in the union ()
- (d) sum of the sizes of all members ()

B. Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. When declaring character arrays, we must allow one extra element space for the null terminator or null character '\0'.

(T / F)

2. Price\$ is valid for naming a variable.

(T / F)

3. The modulus operator % can be used only with integers.

(T / F)

4. The link between a member and a variable in a structure is established using a dot '.' operator.

(T / F)

5. fseek() is used to read a character from a file.

(T / F)

SECTION—II

(Marks : 10)

C. Answer the following questions :

2×5=10

1. (a) What is a keyword in C language?

OR

(b) Explain the working of the address operator (&).

2. (a) Explain a conditional operator.

OR

(b) Mention two conditions we need to follow for naming a variable.

3. (a) Write any two advantages of using a function.

OR

- (b) What are relational operators? List the different types of relational operators.

4. (a) What is a two-dimensional array?

OR

- (b) What is the difference between structure and array?

5. (a) What is a Union?

OR

- (b) What is the difference between library functions and user-defined functions?

(PART : B—DESCRIPTIVE)

(Marks : 50)

D. Answer the following questions :

10×5=50

1. (a) What is a variable? Explain the basic format for declaring a variable.

2+3=5

- (b) What are increment and decrement operators? Mention the difference between pre and post in ++ and -- operators.

2+3=5

OR

2. (a) What is data type? Explain the different classes of data type.

1+3=4

- (b) What are the rules for precedence in evaluation of expressions using arithmetic operators? What will be the output for $9 - ((12 / 3) + 3 * 2) - 1$ in C language?

2+4=6

3. (a) Explain the structure of 'for' loop. Write a program to show the use of for loop. 2+3=5

- (b) Explain the syntax for the switch statement with a sample program. 5

OR

4. (a) Mention the difference between 'while' and 'do while' loops. 4

- (b) Write a simple program using ELSE IF ladder to display the result of a student according to the marks input through the keyboard : 6

80-100 Marks : Distinction

60-79 : First Division

50-59 : Second Division

40-49 : Third Division

0-39 : Fail

5. (a) What are user-defined functions? Explain the syntax for declaring a function. How is it called from the main function? 2+2+1=5

- (b) What is the difference between function call by value and call by reference? 5

OR

6. (a) Explain any two categories of functions. 5

- (b) Explain the four types of storage classes. 5

7. (a) What is an array? How will you declare and initialize 2D array? 2+3=5

- (b) Write a C program to transpose a matrix. 5

OR

8. (a) What is a pointer? How do you declare and initialize a pointer?

2+3=5

- (b) Write a program to show how a pointer can be used to traverse or access an array element using the concept of pointers and arrays.

5

9. (a) Write a C program to print details of a student like r_no, name, address, phone_no on screen using structure.

5

- (b) What is a file? Explain any four various operations on file.

1+4=5

OR

10. (a) What is an array of structures? Support your answer with suitable example.

2+3=5

- (b) Write the syntax and explain with example the uses of fopen() and fclose() file functions.

5

OR