## BCA-02

## Introduction to Computer <br> Programming Using $\mathbf{C}$

Bachelor of Computer Application (BCA-11/16/17)
First Semester, Examination, 2017

## Time : 3 Hours

Max. Marks : 80
Note : This paper is of eighty (80) marks containing three (03) Sections A, B and C. Learners are required to attempt the questions contained in these Sections according to the detailed instructions given therein.

## Section-A

(Long Answer Type Questions)
Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer two (02) questions only.

1. Answer the following questions.
(a) Write a program to read three values using scanf statement and print the following results :
(i) Sum of the values
(ii) Average of the three values
(iii) Largest of three values
(iv) Smallest of three values
P. T. O.
(b) Write a program using one print statement to print the pattern of asterisks as shown below :

* 

| $*$ | $*$ |  |  |
| :--- | :--- | :--- | :--- |
| $*$ | $*$ | $*$ |  |
| $*$ | $*$ | $*$ | $*$ |

2. Answer the following questions.
(a) How is a multidimensional array defined in terms of an array of pointers ?
(b) How does this definition differ from a pointer a collection of contiguous arrays of lower dimensionality?
3. Answer the following questions.
(a) Differentiate between union and structures with examples.
(b) Discuss the different types of storage classes in C.
4. Answer the following questions.
(a) What is recursion ? What are the uses of recursion? 7
(b) What is an operator ? Explain the arithmetic, relation, logical and assignment operators with the help of an example in C language. 12
Section-B
(Short Answer Type Questions)
Note : Section 'B' contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer four (04) questions only.
5. Write a program that will print your mailing address in the following form :
First line : Name
Second line : Door No, Street
Third line : City, Pin code
6. Explain four types of relational operators and two types of equality operators in C.
7. Write and explain control statement used in C program.
8. Describe two different ways to utilize the increment and decrement operators. How do the two methods differ?
9. Tell the output of the following program : printf ("integer:\%d\n" sizeof i); printf ("float:\%d\n" sizeof x); printf ("double:\%d\n" sizeof d); printf ("character:\%d\n" sizeof c)
10. What is meant by Looping ? Describe any two different forms of looping.
11. What is the purpose of the do-while statement? When is the logical expression evaluated ? What is the minimum number of times that a do-while loop can be executed?
12. How are multidimensional arrays defined ? Compare with the manner in which one-dimensional arrays are defined.

## Section-C

## (Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (1) mark each. All the questions of this Section are compulsory.

1. Suppose $x$ is a two-dimensional integer array having 10 rows and 20 columns. We can declare x as int (*x) [20]; rather than int x[10][20].
(True/False)
2. It is necessary that a loop counter must only be an int. It cannot be a float.
(True/False)
3. Continue keyword skip one iteration of loop.
(True/False)
4. A do-while loop is used to ensure that the statements within the loop are executed at least twice. (True/False)
5. In which header file is the NULL macro defined?
(a) stdio.h
(b) stddef.h
(c) stdio.h and stddef.h
(d) math.h
6. How will you free the allocated memory?
(a) remove(var-name)
(b) free(var-name)
(c) delete(var-name)
(d) dalloc(var-name)
7. What is (void*) 0 ?
(a) Representation of NULL pointer
(b) Representation of void pointer
(c) Error
(d) None of the above
8. The operator used to get value at address stored in a pointer variable is :
(a) *
(b) \&
(c) \&\&
(d) \|

B-52
9. Which header file should be included to use functions like malloc() and calloc() ?
(a) memory.h
(b) stdlib.h
(c) string.h
(d) dos.h
10. What does the following declaration mean ? int(*ptr)[10];
(a) ptr is array of pointers to 10 integers
(b) ptr is a pointer to an array of 10 integers
(c) ptr is an array of 10 integers
(d) ptr is an pointer to array

## BCA-02

B-52

