

BCA–02

Introduction to Computer Programming Using 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

- (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.

1. 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
```

2. Explain *four* types of relational operators and *two* types of equality operators in C.
3. Write and explain control statement used in C program.
4. Describe *two* different ways to utilize the increment and decrement operators. How do the *two* methods differ ?
5. 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)
```
6. What is meant by Looping ? Describe any *two* different forms of looping.
7. 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 ?
8. 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) ||

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

