End Semester Examination of Semester–I, 2019
Subject : BCA
Paper : BCA–102
Full Marks : 70
Time : 3 Hrs

The figures in the margin indicate the marks corresponding to the question

Candidates are requested to give their answers in their own word as far as practicable.

Illustrate the answers wherever necessary.

Group A

1. Answer **any five** out of eight questions: 2x5=10

   i)   What are the differences between scanf() and gets() function?

   ii) Why do we use sizeof()? Give an example.

   iii) Define Pointer with example.

   iv) What do you mean by typecasting?

   v)   Evaluate the following expression using precedence, associativity and parenthesis rules.
   ```
   void main() {
   int a = 8, b = 4, c = 2, d = 1, c = 5, f = 20, int total,
   total = a + b - ( c + d)* 3% e + f/9,
   printf ("% d", total);
   }
   ```

vi) How command line arguments are passed through a C program?

vii) Can a program be compiled without main() function? Justify with example.

viii) What is union? How it differs from a structure?

Group B

Answer **any five** out of seven questions :   5×4=20

2. What will be the output of the following code with reason?

a) int a = 1;
   printf ("%d%d%d", a, ++a, a++);

b) int a[ ] = {1, 2, 4};
   int *b;
   b = a;
   printf ("%d", *b);

3. Explain the utility of "break" and continue statement with proper example.

4. Write a program to print the following output :

```
1
1    2
1    2    3
1    2    3    4
```

5. What do you mean by conditional or ternary operators in C? Explain with example.

6. Write a program in 'C' to swap the contents of two variables without using third variable.

7. Explain actual and formal argument of function in C, give an example of each.

8. Difference between switch case and else if ladder using suitable example.

Group C

Answer **any four** out of six questions : 10x4=40

9. What do you mean by recursion?
Write a program to find the factorial of an integer using recursion.
Write a program to check the year is leap year or not.
2+4+4

10. What are auto, static, and extern variables? Give example. Differentiate between auto and static variables with proper example and explanation. 5+5

11. What do you mean by Array? Give example. Differentiate between post-increment and pre-increment of a variable using example. Write a program of linear search. 2+3+5

12. Write a program to sort an array of 10 elements using bubble sort. Write a program to check whether a number is odd or even. 6+4

13. a) What is difference between including the header file within angular braces ⟨ ⟩ and double quotes " "?

b) When is the "void" keyword used in a function?

c) Differentiate the following :

   i) Local variable and global variable.

   ii) Array and strings.   2+2+(3+3)

14. Which calling convention is used by C-language during argument passing in function?

Can a function return more than one value at a time? Justify your answers.

Write a program to find the prime numbers within 0 to 100.

                                               2+2+6