SECTION - A

1. Answer any 10 questions.
   (10x2=20)

1) Who developed C programming? Write down the default value of char datatype.

2) Define an algorithm. Write down any two disadvantages of an algorithm.

3) What is qualifier? List the qualifiers applied to the primitive datatypes.

4) What is the output of following code:
   # define mul (a, b) a-b
   void main ()
   {
       int x = 5, y = 3, r;
       r = mul(x + y, x - y);
       printf("r = %d", r);
   }

5) Differentiate between break and exit statements.

6) Explain ternary operator with an example.

7) Write down any two disadvantages of an array.

8) Explain function prototype.

9) What is the difference between gets() and scanf() input functions?

10) Define implicit and explicit type casting.

11) Define structure and union.

12) What is use of malloc() and calloc() functions?

P.T.O.
II. Answer any 5 questions. (5×10=50)

13) a) Explain characteristics of C.

b) Develop an algorithm to find smallest of three numbers.

14) a) If x = 50 and y = 20 then perform:
   i) x & y
   ii) x|y and
   iii) x \& y

b) Explain unformatted I/O functions.

15) a) Write a program to demonstrate call by value and call by reference.

b) Explain while and do-while control structures.

16) a) If city [ ] = "BENGALURU" then write the output using following functions:
   i) printf("%s", city);
   ii) printf("%s", city);
   iii) printf("%10.6s", city);
   iv) printf("% -10.6s", city);
   v) printf("%10.0s", city);

b) Write a program to calculate
   \[ \text{NCR} = \frac{N!}{R!(N-R)!} \text{ using function.} \]

17) a) Write a program to demonstrate structure.

b) Write a note on storage classes.

18) a) What is macro? Explain macro definition with example.

b) Explain any five string operations with example.

19) a) Write a program to display fibonacci series using recursive function.

b) Write a program to copy contents of a file into another.

20) a) Write a program to concatenate two strings using pointers.

b) Explain file access methods in C.
I Semester B.C.A. Degree Examination, Nov./Dec. 2017  
(CBCS) (F+R)  
BCA – 103T : PROBLEM SOLVING TECHNIQUES USING C  
(2014-15 and Onwards)

Time : 3 Hours  
Max. Marks : 70

**Instruction** : Answer all Sections.

**SECTION – A**

I. Answer any 10 questions :  
\[(10\times2=20)\]

1) What is an algorithm? Write its features.
2) Why is 'C' called a middle level language? Justify.
3) What are the rules for declaring variables in 'C'?
4) Differentiate between while and do....while loops.
5) What is function prototype? Give the syntax of a function prototype.
6) How are the elements in an array stored in the memory?
7) What is string? What is the length of the string computer?
8) Define pointer with example.
9) Differentiate call by value and call by reference.
10) How does Structure differ from an Union?
11) Write any four file functions.
12) What is macro? List the types of macros.

**SECTION – B**

II. Answer any five questions :  
\[(5\times10=50)\]

13) a) Explain the structure of 'C' program with suitable programming example.  
\[6\]

b) Write an algorithm for largest of three numbers.  
\[4\]

14) a) Explain the different data types supported by 'C'.  
\[5\]

b) Explain formatted I/O functions in 'C'.  
\[5\]

P.T.O.
15) a) Explain the working of if and if-else statements with example.  
   b) Write a 'C' program to generate a range of prime numbers using function.  

16) a) Write a 'C' program to print product of two matrices.  
   b) What is typedef? Explain with an example.  

17) a) Write a program to define a structure of an employee with id, name and basic pay, read the print the information.  
   b) Explain static and dynamic memory allocation.  

18) a) Explain function with arguments and with return values with an example.  
   b) Write a 'C' program to find length of a given string using pointers.  

19) a) Write a 'C' program to copy contents from one file to another.  
   b) What are command line arguments? Explain with example.  

20) a) Explain file access methods in 'C'.  
   b) What is recursion? Write a program to find factorial of a number using recursion.
I. Answer any ten questions. Each question carries two marks. (10x2=20)
   1) What is software? Mention the classification of software.
   2) Mention the different datatypes supported in C language.
   3) What is type casting? Give an example.
   4) Mention the classification of I/O functions with example.
   5) Explain the break and continue statements.
   6) Give the advantages of function.
   7) Explain the classification of arrays.
   8) Mention any four string functions.
   9) Give the difference between structure and union.
  10) Explain any two memory related functions.
  11) Mention different file opening modes.
  12) What is preprocessor directive? Give an example.

II. Answer any five questions. Each question carries ten marks. (5x10=50)
  13) a) Write the algorithm to find the sum of the series: 1 + 2 + 3 + 4 +... upto n terms.
      b) Explain the tokens of C language.
  14) a) Explain the types of operators.
      b) Write a C program to demonstrate bitwise operators.
15) a) Write a C program to print the following format.

    1 2 3 4

b) What is control statement? Explain different control statements.

16) a) Explain the function definition and function prototyping.

b) Write a C program to find GCD of two numbers using recursive function.

17) a) Explain linear search algorithm to search an element in an array with program.

b) Explain different storage classes in C language.

18) a) Write a C program to find the product of two matrices.

b) Explain string operations.

19) a) Explain definition, declaration and initialization of structure.

b) Explain call by value and call by reference with example.

20) a) Explain the writing and reading the information with file.

b) What is macro? Explain the macro definition with example.
I Semester B.C.A. Degree Examination, November/December 2015
(Y2K14 Scheme) (CBCS)
COMPUTER SCIENCE
BCA 103T : Problem Solving Techniques Using ‘C’

Time : 3 Hours
Max. Marks : 70

**Instruction**: Answer all Sections.

SECTION – A

I. Answer any ten questions:

1) Define algorithm.
2) Define system software.
3) What is header file?
4) What are the rules for declaring variables in C?
5) Give the syntax and example for If-Else statement.
6) What is the difference between break and continue?
7) How to declare and initialize two dimensional array?
8) Difference between Strcmp() and Strcmpf().
9) What is Mallac() and Calloc()?
10) Give the difference between * and & in C pointer.
11) What is file pointer?
12) What are command line arguments?

SECTION – B

II. Answer any five of the following:

13) a) Explain the structure of a C program. 4
    b) Write an algorithm and flowchart to find largest of 3 numbers. 6
14) a) Explain formatted input-output function in C. 5
    b) Explain binary operators in C with examples. 5

P.T.O.
15) Write a menu driven C program using switch-case to find:
   a) Sum of the digits of a number
   b) Factorial of N.  
   10
16) Explain different types of user-defined functions with examples.  
   10
17) a) Write a C program to arrange the given set of numbers in ascending order.  
    b) Write a program to find the product of matrices of order m x n. 
    6
18) a) Explain call by value and call by reference with examples. 
    5
    b) Explain array of structures with an example. 
    5
19) a) Explain different modes of opening a file. 
    b) Write a C program to copy contents of one file to another. 
    5
20) Write short notes on:
    a) Local variable and global variable. 
    5
    b) While loop and Do-while loop. 
    5
First Semester B.C.A. Degree Examination, November/December 2014
(Y2K14 Scheme) (CBCS)
COMPUTER SCIENCE
BCA 103 T : Problem Solving Techniques using C

Time : 3 Hours
Max. Marks : 70

Instruction : Answer all Sections.

SECTION - A

I. Answer any ten questions : (10x2 = 20)

1. What is structured programming ?
2. What are enumeration variables ? How are they declared ?
3. What are the different data types in C ?
4. Write the syntax of conditional operator and give example.
5. What happens when an array with a specified size is assigned ?
   a) with values fewer than the specified size.
   b) with values more than the specified size.
6. What are preprocessor directives ?
7. What is function prototype ? Why is it necessary ?
8. How does structure differ from an union ?
9. What are the advantages of using recursive functions ?
10. What is pointer ? How is a pointer initialized ?
11. How does an append mode differ from a write mode in files ?
12. How does a EOF differ from feof ?

P.T.O.
SECTION - B

II. Answer any five of the following: (5x10=50)

13) a) What are various symbols used in designing a flowchart? Explain by taking an example.
   b) Describe in detail the syntax errors, logic errors and run time errors.

14) a) Explain the different unary operators available in C.
   b) Write a algorithm to find the roots of the quadratic equation.

15) a) What is switch statement? What are the advantages of switch statement compared to nested if statement?
   b) Compare in terms of their functions, the following pairs of statements
      i) while and do...while.
      ii) break and continue.

16) a) Differentiate between call by value and call by reference function.
   b) Define the term scope of a variable. What are the different types of scopes used in C? Explain in detail.

17) a) In what way does an array differ from an ordinary variable? Explain the characteristics of array in C.
   b) Write a program to find the largest element in the list of n elements.

18) a) How does structure differ from an array? Explain.
   b) Describe various string library functions used in C.

19) a) Explain the relationship between a pointer and the name of the array.
   b) Explain the arithmetic operators that are permitted to pointers.

20) Write a short note on:
   a) Bit fields.
   b) Formal and actual arguments.
   c) Dynamic memory allocation.
   d) Command line arguments.