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 :

(10×2 = 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 ?
II. Answer any five of the following: \( (5 \times 10 = 50) \)

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.