Code: 13A05101

R13

B.Tech I Year (R13) Supplementary Examinations December 2017
PROBLEM SOLVING COMPUTER PROGRAMMING
(Computer Science & Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)
*****

1   Answer the following: (10 X 02 = 20 Marks)
  (a) Define algorithm and mention the properties of an algorithm.
  (b) What is an identifier in C?
  (c) Describe associativity of operators with appropriate example.
  (d) Write a C program to print all the ASCII values and their equivalent characters using while loop. The ASCII values vary from 0 to 255.
  (e) Explain call by reference mechanism.
  (f) How two dimensional arrays are represented in the memory?
  (g) Illustrate Bitwise shift-left operator with a neat diagram.
  (h) Define enumerated type in C.
  (i) What is function pointer in C.
  (j) Write a statement to open a file in read mode.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   (a) Describe different computing environments with suitable diagram.
  (b) Explain in detail about the system development life cycle.
OR
3   (a) What are the stages of problem solving? Explain.
  (b) Explain top-down design process in detail.

UNIT – II

4   (a) Explain the structure of C program.
  (b) Illustrate the concept of different loops in C with syntax and flowcharts.
OR
5   (a) Write an algorithm for the generation of Fibonacci sequence.
  (b) What is type conversion? Explain the different types of conversion in detail.

UNIT – III

6   Write a C program to multiply two 3X3 matrices.
OR
7   Every integer can be expressed as a product of prime numbers. Design an algorithm to compute all the prime factors of an integer n.

UNIT – IV

8   Define C string. Discuss in detail about standard string manipulation functions.
OR
9   What is structure in C? How it is different from an array? Explain with suitable example.

UNIT – V

10   Define single linked list. Explain the insertion of new node into a single linked list at different possible locations.

OR
11   Discuss in detail about standard library functions for files in C.

*****