

Code: 13A05101

B.Tech I Year (R13) Regular Examinations June/July 2014

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)
- Write the essential steps for binary search procedure.
 - Write a program that prompts the user to enter three numbers and then prints them vertically (each on one line).
 - Distinguish between while and do – while loops.
 - Given a set of n students' examination marks (in the range of 0 to 100) make a count of the number of students that passed the examination. A pass is awarded for all marks of 50 and above. Write the algorithm for the above problem.
 - Given a number m, devise an algorithm to compute its square root.
 - List the advantages that are associated with the use of functions in C language.
 - What is type definition? Illustration it with its syntax and example.
 - Define anonymous enumeration. Explain with example.
 - With the help of syntax and example, explain the realloc function.
 - Write a program that adds two numbers by using pointers.

Part – B
(Answer all five units, 05 X 10 = 50 Marks)

UNIT - I

- 2 (a) Explain the structure of a C program in detail.
(b) What is testing? Explain the different types of testing in detail.
- OR
- 3 (a) Write a program to calculate the bill amount for an item given its quantity sold, value, discount and tax.
(b) What is a constant? Explain the different types of constants.

UNIT - II

- 4 (a) Write a program to enter a number and then calculate the sum of its digits.
(b) With the help of syntax and flowchart, explain any two iterative statements.
- OR
- 5 (a) Design an algorithm that accepts a positive integer and reverses the order of its digits. Explain it with a suitable example.
(b) Write a program that accepts a number from 1 to 10. Print whether the number is even or odd by using switch case construct.

UNIT-III

- 6 With the help of a neat sketch describe in detail about the different derived types.
- OR
- 7 (a) Write a recursive program to print the factorial value of any given integer.
(b) Discuss in detail about the two dimensional arrays.

UNIT-IV

- 8 (a) What is a structure? Explain how to declare, initialize and access the structure elements.
(b) Write a program to find the largest of three numbers by using logical AND operator.
- OR
- 9 (a) Write a program to display whether any given string is a palindrome or not.
(b) Give brief description about the different types of shift operators.

UNIT-V

- 10 What is a linked list? Explain the insertion of new node into a single linked list at various possible locations.
- OR
- 11 (a) Distinguish between text and binary files.
(b) Give brief description about the various file status functions.
