

Code: 13A05101

B.Tech I Year (R13) Supplementary Examinations June 2017

PROBLEM SOLVING & COMPUTER PROGRAMMING

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- (a) Define variable in C.
- (b) List the features of C language.
- (c) What is C expression? Write an example.
- (d) Illustrate event controlled loop with an example.
- (e) Write a function to compute factorial of a given number.
- (f) Define scope in C.
- (g) How to represent an array of strings in memory?
- (h) Differentiate between Structure and Union types.
- (i) Write a sample C program to demonstrate array of pointers.
- (j) How to allocate memory dynamically? Explain.

PART – B

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

UNIT - I

- 2 (a) Define computer system and explain different components in brief.
- (b) What is meant by a computer language? Explain briefly about the computer languages used over the years.

OR

- 3 (a) What is a constant? Explain the different types of constants in C.
- (b) Describe standard C input and output functions with suitable C program.

UNIT - II

- 4 What is an operator in C? What are the different operators available in C? Explain with suitable examples.

OR

- 5 (a) Develop and implement an algorithm for reversing the digits of an integer.
- (b) Explain the switch case control structure in C with syntax and flow chart.

UNIT - III

- 6 Write recursive and non-recursive procedures for binary search.

OR

- 7 Given two positive non-zero integers n and m. Design an algorithm for finding their greatest common divisor.

UNIT - IV

- 8 (a) Write a C program to find the length of a string without using standard string library function.
- (b) Write a program to find the largest of three numbers by using logical AND operator.

OR

- 9 (a) What is a structure? Explain how to declare, initialize and access the structure elements.
- (b) Write a C program to display whether a given string is palindrome or not.

UNIT - V

- 10 (a) Write a C program to illustrate pointer arithmetic.
- (b) Write a suitable C program to demonstrate passing an array to a function.

OR

- 11 (a) Differentiate between text and binary files.
- (b) Write a C program to copy contents of existing file to another file (new).