

Code: 19ES1102

I B.Tech - I Semester – Regular Examinations - December - 2019

PROBLEM SOLVING AND PROGRAMMING
(Common for CIVIL, CSE, ME)

Duration: 3 hours

Max. Marks: 70

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- Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.
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PART – A

1. a) Define Algorithm.
- b) Write a C program to swap two numbers without using third variable.
- c) Write a program to print an element at a position in one dimensional array.
- d) Explain about declaration & initialization of pointer variables.
- e) What are self referential structures?

PART – B

UNIT – I

2. a) Describe about the problem solving aspects. 6 M

- b) Design an algorithm/program for the factorial computation. 6 M

OR

3. a) Design an algorithm/program for the Sine Function Computation. 6 M
- b) Explain different Symbols in flow chart with an example. 6 M

UNIT – II

4. a) Explain different data types supported by C language with their memory requirements. 6 M
- b) What is the need of format specifier? Write a sample program to illustrate any five format specifiers. 6 M

OR

5. a) Demonstrate the usage of switch statement in C. 6 M
- b) Write a C program to accept an integer number and print the digits using words (for example 356 is printed as Three Five Six). 6 M

UNIT-III

6. a) What is a loop? Explain different loop statements in C with example. 6 M
- b) Write a C program to calculate m^n value using 'while' and 'do-while' loop. 6 M

OR

7. a) Write a C program to multiply two 2-dimensional arrays. 6 M

- b) Explain the following string handling functions:
(i) strcpy() (ii) strlen() (iii) strcat() 6 M

UNIT – IV

8. a) What is a function? What are the uses of functions? 6 M
Discuss the rules followed to call a function.
- b) What is recursive function? In what way recursive 6 M
function is different from iteration. Explain with an
example.

OR

9. a) What is the scope of variables of type extern, auto, 6 M
register and static? Explain with example.
- b) Define dynamic memory allocation. Discuss about the 6 M
different dynamic memory allocation functions.

UNIT – V

10. a) How do you define a structure and structure variables? 6 M
How to access their elements and perform operations
on them? Explain with examples.
- b) Explain how to access the elements of a union with an 6 M
example.

OR

11. a) Explain the following functions in files: 6 M
(i) fseek() (ii) ftell() (iii) rewind()
(iv) fopen() (v) fclose() (vi) foef()
- b) Write a C program that reads contents of a file and 6 M
displays them in capital letters if they are alphabets.