

Code: 20ES1103

**I B.Tech - I Semester – Regular Examinations – JULY 2021****PROBLEM SOLVING TECHNIQUES  
(Common to CSE & IT)**

Duration: 3 hours

Max. Marks: 70

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Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.  
2. All parts of Question must be answered in one place.

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**UNIT – I**

1. a) Explain in detail about computer components with a neat diagram. 7 M
- b) Draw a flowchart for withdrawal of cash through ATM machine. 7 M

OR

2. a) Define a flow chart. List out the symbols that are used for a flowchart. 7 M
- b) Develop an algorithm to find factorial of a given number. 7 M

**UNIT – II**

3. a) Demonstrate the procedure to find GCD using recursion. 7 M
- b) Describe a function to compute  $n^{\text{th}}$  Fibonacci number for a given number. 7 M

OR

4. a) Demonstrate the procedure for generating pseudo random numbers 7 M  
b) Construct an algorithm for generating prime numbers up to the given number 7 M

### **UNIT-III**

5. a) Discuss the array order reversal technique. 7 M  
b) Demonstrate the procedure to remove duplicates from an ordered array. 7 M

OR

6. a) Discuss about Histogramming in detail. 7 M  
b) Demonstrate the ways to find the  $k^{\text{th}}$  smallest element from an Array. 7 M

### **UNIT – IV**

7. a) Define Searching. Explain the recursive procedure for Binary Search. 7 M  
b) Discuss sorting by exchange with appropriate examples. 7 M

OR

8. a) Explain the two-way merge procedure for ordered sets. 7 M  
b) Discuss sorting by selection with appropriate examples. 7 M

## UNIT – V

9. a) Demonstrate various methods used for text processing. 7 M
- b) Write a procedure to search a keyword from the given text. 7 M

OR

10. a) Explain sublinear pattern search with example. 7 M
- b) Write a procedure to implement line editing from text. 7 M