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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)

B.Tech I Year I Semester Supplementary Examinations December-2021

PROGRAMMING FOR PROBLEM SOLVING

(Common to CE, ME, AGE &amp; EEE)

Time: 3 hours

Max. Marks: 60

**PART-A**

(Answer all the Questions 5 x 2 = 10 Marks)

- |   |   |  |    |
|---|---|--|----|
| 1 | a | What is the purpose of adding comments in a program?           | 2M |
|   | b | Write a program to print the multiplication table from 1 to n. | 2M |
|   | c | What is #include, #define directives.                          | 2M |
|   | d | Define pointer. How can you declare it?                        | 2M |
|   | e | Write some of the differences between Structure and Union.     | 2M |

**PART-B**

(Answer all Five Units 5 x 10 = 50 Marks)

**UNIT-I**

- |   |   |  |    |
|---|---|--|----|
| 2 | a | Write an algorithm, flowchart and C program to find the sum of numbers from 1 to $n$ . | 5M |
|   | b | Write the structure of C program and explain.  | 5M |

**OR**

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|---|---|--|----|
| 3 | a | Define algorithm. Write algorithm for finding factorial of a number. | 5M |
|   | b | What is flowchart? Explain different symbols used for flowchart.     | 5M |

**UNIT-II**

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|---|---|--|----|
| 4 | a | Write and explain about switch statement.                      | 5M |
|   | b | Write a Program to perform arithmetic operations using switch. | 5M |

**OR**

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|---|---|---|----|
| 5 | a | Write a program to check whether the given number is palindrome or not. | 5M |
|   | b | Write a program to find sum of the individual digits of a given number. | 5M |

**UNIT-III**

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|---|---|--|----|
| 6 | a | Write a C program to sort the given array elements in Ascending order. | 5M |
|   | b | Write a C program to print the sum of diagonal elements of 2-D matrix. | 5M |

**OR**

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|---|---|--|----|
| 7 | a | Write a C program to read and display a 3 by 3 matrix. | 6M |
|   | b | Write a C program to add 2 matrices of size n by n.    | 4M |

**UNIT-IV**

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|---|---|--|----|
| 8 | a | What are the features of pointers? Write a C program to print address of a variable. | 6M |
|   | b | With proper examples, explain different arithmetic operations on pointers.           | 4M |

**OR**

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|---|---|--|----|
| 9 | a | Explain the concept of functions returning pointers with example.        | 5M |
|   | b | Write a C program to read and print an array of elements using pointers. | 5M |

**UNIT-V**

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|----|---|--|----|
| 10 | a | Define Structure and write the general syntax for declaring and accessing members. | 5M |
|    | b | How to copy and compare structure variables? Illustrate with example.              | 5M |

**OR**

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|----|---|--|----|
| 11 | a | Write a C program to read and display student details using structure. | 5M |
|    | b | List out the differences between unions, structures and arrays.        | 5M |

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