FACULTY OF ENGINEERING

B. E. (ECE/M/P/AE/CSE/CME/IT) II – Semester (AICTE)

(Main & Backlog) Examination, December 2020

Sub: Programming for Problem Solving

Time: 2 Hours   **Max. Marks: 70**

Note: **(Missing data if, any can be assumed suitable).**

PART – A

Answer any five questions.   **(5 x 2 = 10 Marks)**

1) Define an algorithm. Write an algorithm for sum of individual digits in a given number.
2) Write the difference between object code and executable code?
3) Compare and contrast "while" and "do-while" loop.
4) Write the characteristics of array in C.
5) What does "extern" mean in a function declaration?
6) Write the algorithm for linear search.
7) Define recursion, with an example.
8) What is Bit field in structures?
9) Is null pointer same as uninitialized pointer.
10) What is a file? What are file operations.

PART-B

Answer any four questions.   **(4 x 15 = 60 Marks)**

11. a) What are the advantages and disadvantages of structured programming?
    b) Write an algorithm to print the numbers that do not appear in the Fibonacci series.

12. a) What are the different types of operators that are included in C. Give example for each.
    b) Write a C program to add the prime numbers of a certain range (0 to 10)

13. a) Write a program to find the determinant of a matrix.
    b) How arrays are passed to a functions with an example.

14. Declare a structure to store the following information of an employee- employee code, employee name, salary, Department number. Write a C program to store the data of 'n' employees where n is given by user and use a function to display the employee information getting the maximum and minimum salary.

15. a) What is pointer variable? Give example? And what are the arithmetic operations that can be performed.
    b) Explain the linked list using example.

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16. a) Write a program to copy contents from one existing file into another file.
    b) Write a program that uses a function to sort the elements given by the user
       using selection sort.

17. (a)Write a e-program to find the factorial of a given number.
    (b) Write a program to find the roots of quadratic equation.

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