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First/Second Semester B.E. Degree Examination, June/July 2023 Problems Solving through Programming

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define computer. Explain the generations of computer. (08 Marks)
b. Differentiate between primary memory and secondary memory. (04 Marks)
c. Define operator. Explain any 06 operators with suitable example. (08 Marks)

OR

- 2 a. Define network Topology. List and explain the different types of network Topology. (06 Marks)
b. Convert the following mathematical expression into 'C' equivalent statement:
(i) $m = \frac{1}{(x^2 + y^2)}$
(ii) $n = \sqrt{b^2 - 4ac}$ (04 Marks)
c. Write the basic structure of 'C' program. Explain each sections briefly with suitable example. (10 Marks)

Module-2

- 3 a. With examples how would describe the formatted input and formatted output statements in C language. (08 Marks)
b. What are different types of conditional statements? Explain if, if-else and nested if with syntax and examples. (08 Marks)
c. Evaluate :

```
i = 1 ;  
L : if (i > 2)  
{  
    printf("Saturday");  
    i = i + 1 ;  
    goto < ;  
}  
printf("Sunday");
```


Explain your result briefly. (04 Marks)

OR

- 4 a. How the while loop differs from do-while loop? (06 Marks)
b. Write a 'C' program to check whether a given integer is palindrome or not. (06 Marks)
c. Write a C program to plot Pascal's triangle. (08 Marks)

Module-3

- 5 a. What is an array? Write syntax for declaring two dimensional array and initialize the same with suitable example. (08 Marks)
- b. Write a C program to find transpose of a given matrix. (06 Marks)
- c. List the difference between linear and binary search. (06 Marks)

OR

- 6 a. Define string. List out all string manipulation function. Explain any two with examples. (10 Marks)
- b. Write a C program to copy a string (combination of digits and alphabets) to another string (only alphabets). (10 Marks)

Module-4

- 7 a. Write a C program for evaluating the binomial coefficient using a function Factorial (n). (10 Marks)
- b. Define the following : (04 Marks)
- (i) Actual parameter.
 - (ii) Formal parameter.
 - (iii) Global variable.
 - (iv) Local variable.
- c. Write a C program to generate Fibonacci series using recursive function. (06 Marks)

OR

- 8 a. Define a function. List and explain the categories of user defined functions. (10 Marks)
- b. Differentiate (i) User defined and built-in function (ii) Recursion and iteration. (10 Marks)

Module-5

- 9 a. What is a structure? Explain the syntax of structure declaration in C with example. (04 Marks)
- b. Write a C program that accepts a structure variable as a parameter to a function from a function call. (10 Marks)
- c. Define a pointer. How the pointers are declared and initialized. (06 Marks)

OR

- 10 a. Differentiate between structures and unions. (04 Marks)
- b. What is preprocessor directive? Explain #define and #include preprocessor directive. (06 Marks)
- c. Write a C program to find sum and mean of all elements in an array using pointer. (10 Marks)
