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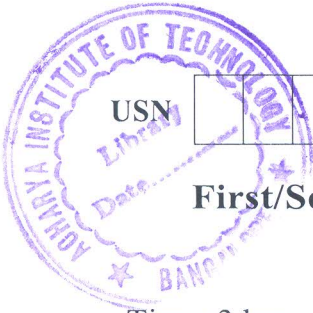
First/Second Semester B.E. Degree Examination, July/August 2021
C Programming for Problem Solving

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions.*

1   a.   Explain different generations of computer.   **(10 Marks)**
    b.   With a neat block diagram of computer explain its components.   **(10 Marks)**

2   a.   Write the basic structure of C program. Briefly explain each section.   **(08 Marks)**
    b.   Classify the operators based on the number of operands. Explain with one example for each.
                                                                                            (08 Marks)
    c.   State whether the following are valid identifiers or not: integer, char, _for, while.   **(04 Marks)**

3   a.   With neat syntax explain formatted input and output functions.   **(06 Marks)**
    b.   Compare while and do-while loops.   **(04 Marks)**
    c.   Write a C program to display the Pascal's triangle.   **(10 Marks)**

4   a.   With neat syntax and example, explain if, if…else and switch statements.   **(10 Marks)**
    b.   Write a C program to find the roots of a quadratic equation.   **(10 Marks)**

5   a.   What is string? With example, explain the following spring manipulation functions strcpy,
         strcmp, strcat and strrev.   **(10 Marks)**
    b.   Write a C program to sort the list of numbers using bubble sort technique.   **(10 Marks)**

6   a.   What is an Array? Explain the declaration and initialization of one dimensional array.
                                                                                            (10 Marks)
    b.   Write a C program to search a given key element from the list of elements using binary
         search technique.   **(10 Marks)**

7   a.   With neat syntax explain the following:
         i)   Function declaration
         ii)   Function cal
         iii)   Function definition.   **(06 Marks)**
    b.   Explain global variables and static variables.   **(04 Marks)**
    c.   What is function? List and explain the categories of user defined functions.   **(10 Marks)**

8   a.   What is recursive function? Write a C program to find the factorial of a number using
         recursion.   **(06 Marks)**
    b.   Write a C program to find Fibonacci series using function.   **(08 Marks)**
    c.   Explain call by value and call by reference functions.   **(06 Marks)**

9   a.   Define structure. Explain how structure members are accesses using dot (·) operator.

                                                                  (04 Marks)

   b.   Write a C program to accept RollNo, Name, and Marks of students and display the sum and average of the marks using structure. **(10 Marks)**

   c.   What is pointer? With example explain how pointer variables are declared and initialized. **(06 Marks)**

10 a.   What is preprocessor directive? Explain #define preprocessor directive. **(04 Marks)**

   b.   Write a C program to compute the sum, mean and standard deviation of elements stored in an array of n real numbers using pointers. **(10 Marks)**

   c.   With example explain structure within structure. **(06 Marks)**

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