Term Work (PCS 151)

INSTRUCTION:

1. Use one side ruled bond sheets (Thick) for writing and DMP sheets for printouts.
2. For all questions, every solution must contain the following: - Problem statement, Assumptions, Algorithms, Printout of program and all possible outputs on separate sheets.
5. Margin should be drawn on flowchart sheet 2cm from right and 1cm from rest of the three sides.
6. Write your name, University roll no. and section with problem statement at the top of every code in the comment section.
*7. The last date for submission is **26/12/22**.*

1. WAP to find roots of a quadratic equation, equation is of the form ($ax^2+bx+c=0$)
2. Write a C program to input electricity unit and calculate total electricity bill according to the given condition.
   For first 50 units Rs 0.50 per unit
   For next 100 units Rs 0.75 per unit
   For next 100 units Rs 1.20 per unit
   For unit above 250 Rs 1.50 per unit
   An additional surcharge of 20% of bill is added.
3. Write a C program to find factors of a number and check whether number is perfect or not.
4. Write a C program to find maximum and minimum among n integer number.
5. Write a program to print following series: 0 3 8 15 24 35 48 …. Upto n term.
6. Write a program to print all the prime numbers between the range m and n.
7. Write a program to print following pattern:

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*                 *
* *             * *
* * *         * * *
* * * *     * * * *
* * * * * * * * * *
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8. Write a C program to input n integer numbers from user and print reverse of each number.
9. Write a C program to find sum of following series:
   1 + 1/3! + 1/5! + 1/7! + …….. 1/n!
10. Input n numbers in an array and find the nearest lesser and nearest greater element than a given element.

Example: a[] ={ 3,6,2,1,8,6,3,4,10,15]

Let input x= 8

Output: nearest lesser 6 nearest greater 10

11. Input n characters in an array and replace the characters as per the given instructions:
    1. Replace all capital vowels with symbol $.
    2. Replace all the capital consonant with symbol #.
    3. Replace all small letter vowels with symbol *.
    4. Replace all the small letter consonant with symbol +.
    5. Relace all special symbols with spaces.
    6. Replace all spaces with digit 5.
    7. Replace all digits with @
12. Input n elements in an array and organize them in descending order using a sorting technique.
13. Write a code to remove duplicate elements in an array using function.
14. Input a matrix of order m x n. Print the sum of all the odd elements present in each row and all the odd elements present in each column.
15. Input a matrix of order m x n and print the square of elements in principal diagonal and cubes of secondary diagonal.
16. Write a user defined function to print Fibonacci series.
17. Write a menu driven program using functions that can perform the following tasks on pressing given keys:
    1. Check a number is odd or even.
    3. Print reverse of a number.
    4. Print sum of series 1+3+5+7+9……upto n
    5. Exit
18. Write a user defined code to input 10 elements in an array (all distinct). Pass this array to the function and find the sum of first three smallest and first three largest elements present in the array. Compare the sum and return the smallest sum to calling function. Print the result.
19. Write a recursive code to print gcd of 2 numbers.
20. Write a program in C to calculate the sum of numbers from 1 to n using recursion.