Noida Institute of Engineering & Technology, Greater Noida

Problem Solving using Python Lab (ACSE0151)

2021-2022, odd semester

B. Tech. First Year (First Sem.)

UNIT I	
1.	Python Program to Print Hello world!
2.	Python Program to Add Two Numbers.
3.	Python Program to Find the Square Root.
4.	Python Program to Calculate the Area of a Triangle.
5.	Python Program to Solve Quadratic Equation using exponent operator.
6.	Python Program to Swap Two Variables
7.	Python Program to Convert Kilometres to Miles (1 mile = 1.67 km)
8.	Python Program to Convert Celsius To Fahrenheit F=9*C/5+32
9.	Python program to convert height (in feet and inches) to centimetres. (1 feet= 12 inches, 1 inch=2.54 cm) (cms=feet*12*2.54+inches*2.54)
10.	Python program to calculate the hypotenuse of a right-angled triangle. (h=(b*b +h*h)**0.5)
11.	Python program to convert all units of time into seconds.
12.	Python program to calculate midpoints of a line-segment.
13.	Python program to display your details like name, age, address in three different lines.
14.	Python program to compute the distance between the points (x1, y1) and (x2, y2).
UNIT II	
15.	WAP to find the absolute value of the given number.
16.	WAP to Check if a Number is Odd or Even.
17.	WAP to find greater between two numbers.
18.	WAP to check whether a number is divisible by another number.
19.	WAP to find the largest among three numbers.
20.	WAP to find the smallest among three numbers.
21.	WAP to check whether a number is zero, negative or positive.
22.	WAP to check whether a given year is leap year or not.
23.	WAP to compute the roots of the quadratic equation.
24.	WAP to enter a character and then determine whether it is a vowel, consonants, or a digit.
25.	WAP that accepts the marks of 5 subjects and finds the percentage marks obtained by the student. It also prints grades according to the following criteria: Between 90-100%----------Print 'A' 80-90%----------Print 'B' 60-80%----------Print 'C' 50-60%----------Print 'D' 40-50%----------Print 'E'

	Below 40%----------Print 'F'
26.	WAP to simulate the calculator (Arithmetic operations: +, -, /, *).
27.	WAP to display the first N natural numbers.
28.	WAP to compute the sum of first N natural numbers.
29.	WAP to compute the factorial of the given number.
30.	WAP to compute the sum of factorial of the first n natural number.
31.	WAP to display the table of the given number.
32.	WAP to compute the sum of the digits of the given number.
33.	WAP to reverse the given number. Also check whether the given number is in palindrome or not.
34.	WAP to count the number of digits of the given number.
35.	WAP to check whether the given number is an Armstrong number or not.
36.	WAP to display the following series. $1^3, -2^3, 3^3, -4^3, \ldots\ldots, (-1)^{n+1}\ n^3$
37.	WAP to compute the sum of following series up to the n^{th} term. $1 + x^1/1! + x^2/2! + x^3/3! + \ldots\ldots$
38.	WAP to check whether the given number is prime number or not.
39.	WAP to find the sum of odd and even numbers separately within a given range.
40.	WAP to display all the prime numbers in given range.
41.	WAP to compute the sum of Fibonacci series up to n^{th} term.
42.	WAP to display all the factors of a number.
43.	WAP to display all the Armstrong number from 1 to n.
44.	WAP to compute the HCF of two numbers.
45.	WAP to compute the LCM of two numbers.
46.	WAP to convert the decimal number to the binary number.
47.	WAP to convert the binary number to the decimal number.
48.	WAP to convert the decimal number to the octal number.
49.	WAP to convert the octal number to decimal number.
50.	WAP to display the Floyd's triangle. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
51.	WAP to display the following pattern. A A B A B C A B C D A B C D E
52.	WAP to display the following pattern. * * * * * * * * * * * * * * * * *

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UNIT III											
53.	WAP to implement the user defined function to add two numbers.										
54.	WAP to check whether the two numbers are equal or not.										
55.	WAP to find the largest of three numbers using user defined function.										
56.	WAP to check whether the given year is a leap year or not using user defined function.										
57.	WAP to swap the values of two variable that are defined as global variables.										
58.	WAP to compute the factorial of the given number using user defined function.										
59.	WAP to compute the P (n, r) using user defined function.										
60.	WAP to compute the C (n, r) using the user defined function.										
61.	WAP to compute the HCF and LCM of two numbers using user defined function.										
62.	WAP compute the sum of the series using user defined function.										
63.	WAP to display the pattern using user defined function.										
64.	WAP to display the Fibonacci series using user defined function.										
65.	WAP to compute the sum of Fibonacci series up to nth term using user defined function.										
66.	WAP to compute the sum of the digits using user defined function.										
67.	WAP to check whether the given number is a prime number or not using user defined function.										
68.	WAP to compute the exponential of number w.r.t. another number.										
69.	WAP to compute the sum of the first n natural number using recursion.										
70.	WAP to compute the factorial of the given number using recursion.										
71.	WAP to compute the exponential of number w.r.t. another number using recursion.										
72.	WAP to display the Fibonacci series using recursion.										
73.	WAP to compute the sum of digits of the given number using recursion.										
74.	WAP to compute the reverse of the given number using recursion.										
75.	WAP to multiply two numbers using lambda function.										
76.	WAP to compute the cube of all numbers in the given list using map() function.										
77.	WAP to create a new list consisting of odd numbers from the given list of numbers using filter() function.										
78.	WAP to compute the sum of all the elements of the list using reduce() function.										
79.	WAP to find the largest element in the given list using reduce() function.										
UNIT IV											
80.	WAP to find min, max and average of elements of a list having numeric data										
81.	WAP to print all even numbers of a list using list comprehension										
82.	WAP to find sum of all even numbers and odd numbers separately in a list										
83.	WAP that reverses a list using loop.										
84.	Python Program to Add Two Matrices										
85.	Python Program to Multiply Two Matrices										
86.	Python Program to Transpose a Matrix										
87.	Python Program that validates given mobile number. Number should start with 7, 8 or 9 followed by 9 digits.										
88.	WAP to find occurrence of each character in string.										
89.	WAP that inverts a dictionary. That is, it makes key of one dictionary value of another and vice versa.										

90.	WAP that prompts user to enter an alphabet and then print all the words that starts with that alphabet from the list of words.
UNIT V	
91.	WAP to read the content of whole file using read() function.
92.	WAP to read the existing file line by line.
93.	WAP to copy the contents of one file into another file.
94.	WAP to count number of vowels and consonants in a text file.
95.	WAP to count number of words, lines, and characters in a text file.
96.	Python Program to handle divide by zero exception.
97.	WAP to handle multiple exception.