**SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN**

**AUTONOMOUS**

**Vishnupur, BHIMAVARAM – 534202**

**I N D E X**

| **Prog. No.** | **Date** | **Name of the Program** | **Page No.** | **Marks** |
| --- | --- | --- | --- | --- |
| 1 |  | **Arithmetic operators usage** Find the sum, difference, product, division, remainder, floor division and exponent of two integers num1 and num2 |  |  |
| 2 |  | **Convert Fahrenheit to Celsius** Convert the temperature given in degrees Fahrenheit to degrees Celsius |  |  |
| 3 |  | **Amount in wallet** Find the total amount of money in the wallet, given the number of currency notes of denomination Rs 500, Rs 200, R 100, Rs 50, Rs20 |  |  |
| 4 |  | **Bill value** Calculate the bill value based on the number of units of an item sold, the cost of each item, discount percentage applicable and tax percentage. Number of units, cost of each unit and tax percentage should be given as input. Discount percentage applicable is calculated using the following criteria - if the number of units is greater than 10 discount is 15% else discount is 10% |  |  |
| 5 |  | **Grade in subject**Calculate the grade awarded to a student in a subject based on the marks scored. The grade is awarded based on the following criteria. Marks:>=90 - Grade:A+, Marks:>=80 - Grade:A, Marks:>=70 - Grade:B, Marks:>=60 - Grade:C, Marks:>=50 - Grade:D, Marks:>=40 - Grade:E, Marks:<40 - Grade:F |  |  |
| 6 |  | **Sum and Average of first n numbers**Using while loop, find the sum and average of first N natural numbers. |  |  |
| 7 |  | **Count #positives, #negative, #zeroes**Print the number of positive integers, number of negative integers and number of zeroes enteres by the user.read integers until -1 is entered. Do not count -1 as a negative number |  |  |
| 8 |  | **Integer to Binary**Convert an integer number to its binary equivalent |  |  |
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| 9 |  | **Reverse of a positive integer**Find the reverse of a number |  |  |
| 10 |  | **List of primes in a range**Generate the list of prime numbers in a given range |  |  |
| 11 |  | **Check for Armstrong Number**Check if a given number is Armstrong number or not. A positive integer of n digits is called an Armstrong number of order n (order is number of digits) if abcd… = pow(a,n) + pow(b,n) + pow(c,n) + pow(d**,**n) + …. |  |  |
| 12 |  | **Factorial using recursive function**Find the factorial of a number(Use recursive function) |  |  |
| 13 |  | **Sum of the series** Find the sum of the series 1 + x + x\*\*2 + ... + x\*\*(n-1)x and n are given as input by the user |  |  |
| 14 |  | **Sum of the series** Find the sum of the series 1/2 + 3/4 + 5/6 + ... + 99/100. Print upto four decimal places |  |  |
| 15 |  | **Sum of multiples**Print the sum of the first 10 multiples of a given number |  |  |
| 16 |  | **Check for perfect number** Check if the given number is perfect or not |  |  |
| 17 |  | **GCD using recursive function**Find the GCD of 2 given numbers. (Use recursive function) |  |  |
| 18 |  | **String operations** Perform the following string operations: first letter as the capital letter, all the letters in upper case, all the letters in lower case, first letter in each word capitalized, change the case of each letter, length of the string, list of words |  |  |
| 19 |  | **List Operations**Print all the elements, Replace the 6th element in the list with the element 'New'. Add an element 200 at the end of the list, Remove the element at index 5, Delete the elements from index 3 to index 7, number of elements remaining, Check if the element 10 is present in the list, maximum element and minimum element in the list, sum of all the elements in the list, Convert the list to a tuple |  |  |
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| 20 |  | **Set Operations**Create a set, Print the elements, Add an element 2 using the add() method, Add the elements 2,3,4 using the update() method, Add the list [4,5] and the set {1,6,8}, Delete the element 4 using the discard method, Delete the element 6 using the remove method |  |  |
| 21 |  | **Set Operations - Union, Intersection, Difference, Symmetric Difference**Create set A and set B, Print the elements, union, intersection, Difference and symmetric difference of the sets A and B |  |  |
| 22 |  | **Dictionary operations**Create a dictionary and print all the elements, Print the number of key, value pairs, Print all the keys, Print all the values, Print the keys in a sorted order, Delete the element with key 3 |  |  |
| 23 |  | **Count the number of times each word is repeated**Count the number of times each word is repeated in the given test. Ignore the symbols , . " ! ( ) |  |  |
| 24 |  | **Perfect, Deficient and Abundant numbers**Given large n, find the sum of all perfect numbers, sum of all deficient numbers and sum of abundant numbers separately. Print all perfect numbers along with its sum, deficient numbers along with its sum and abundant numbers along with its sum |  |  |
| 25 |  | **Remove duplicate characters in a string**Write a function “remove\_duplicates” which takes a string argument and returns a string which is the same as the argument except only the ﬁrst occurrence of each letter is present. Make your function case sensitive. |  |  |
| 26 |  | **Number of vowels in the given string**Count the number of vowels in the given string. The characters 'a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U' are considered as vowels |  |  |
| 27 |  | **Check for Balanced parenthesis**Check if the parentheses in the given expression are balanced or not. If the parenthesis are balanced the program should print 'Balanced' otherwise 'Unbalanced' |  |  |
| 28 |  | **Multiply lists of same length**Write a function mult\_lists(a, b) that takes two lists of numbers of the same length, and returns the sum of the products of the corresponding elements of each. Print the sum as output |  |  |
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| 29 |  | **Flatten List**Write a function called flatten\_list that takes as input a list which may be nested, and returns a non-nested list with all the elements of the input list |  |  |
| 30 |  | **Discriminant of a quadratic equation**Write a program that prompts the user to enter values for a, b, c and displays the result based on discriminant |  |  |
| 31 |  | **Exception handling in python**Write a program to divide two integers using exception handling mechanism. Raise an exception when the denominator is 0 or when a user enters a value which cannot be converted to integer. |  |  |
| 32 |  | **Sum and product of NumPy arrays** Create a numpy array using arange function and 10 as the argument. Reshape the array to (2,5) and print the arrayCreate a numpy array using arange function and 20,30 as the arguments. Reshape the array to (2,5) and print the arrayPrint the sum of the two arraysPrint the product of the two arrays |  |  |
| 33 |  | **Counting the occurrence of each letter**Generates 100 lowercase letters randomly and assigns them to a list of characters, named ***chars***.Create a list named ***counts*** that has 26 int values, each of which counts the occurrences of a letter in ***chars***Print the number of times each character is repeated |  |  |
| 34 |  | **Create a module “Prime” to include the following functions**.  isPrime(number), alindromePrime(number), isEmirp(number), mersennePrime(p), printTwinPrimes(range)  Write a test program to import the Prime module and perform the following operations using the functions of Prime module. Prints first 100 prime numbers.Prints first 10 Palindrome prime numbers.Prints first 10 Emirp numbers.Prints all Mersenne prime numbers for the p value below 32.Prints all twin prime numbers below 1000. |  |  |
| 35 |  | **Matrix Multiplication using numpy.matlib**  Create a 2D array of shape (3,2) and convert it to a matrix  Create a 2D array of shape (2,3) and convert it to a matrix  Find the product of the two matrices and print the result |  |  |
| **Total Avg. Marks (Max Marks: 15)** | | |  | |