Programming Concept Assignment1

Data type ,variable, operators , conditional statement

1. Write a program which accepts the radius of a circle from the user and compute its area and circumference and display the output.

2. Write a program to display a string which is n copies of a given string. Where n is a non-negative integer.

3. Write a program to find whether a given number (accept number from the user) is even or odd, print out an appropriate message to the user. If the number is even, print its square and if the number is odd, print its cube.

4. Write a program to test whether a passed letter is a vowel or not. (Accept letter from the user)

5. Write a program to implement a simple calculator that can add, subtract, multiply and divide two integers. Take the required operation as choice from the user.

6. Write a program to check whether a number is a prime number or not.

7. Write a program to check whether the given number is a perfect number or not. A number is called a perfect number if the sum of the factors of that number is equal to the same number. Example: 6 = 1 + 2 + 3

8. Write a program to check whether a number can be expanded as the sum of two prime numbers.
For example, the number 9 can be expanded as two prime numbers 2 and 7
9 = 2 + 7.

9.. Write a program to read a multi word string and print all the words separately

11. Develop a program to perform operations (+,*,-, /, and %) on two whole numbers. Identify suitable data types to represent the numbers and resultant values

12. Develop a program to add two operands and store the result in one of the operand using addition assignment operator.

13. Write a program to find the maximum of 2 numbers using Conditional operator.

14. Write a program contains the following declarations and initial assignments:
int i= 8, j = 5;
float x = 0.005, y = 0.01;
char c = ‘c’, d = ‘d’;

15. determine the value of each of the following expressions.

- (3*i*j)%(2*d)
- (i*j)%(c+2*d) / (x*y)
- 5 * (i + j) > 'c'
- 2*x+ (y== 0)
- (x > y) && (i > 0) || (j < 5)

16. Write a program to find the area and the perimeter of a circle.
Take radius “r” as input.

17. Develop a program to calculate simple interest using the formula I=PTR/100.

18. Write a program to check whether a given number is odd or even.

19. Write a program to check whether the input is digit or alphabet.
Print the ASCII number if it is a digit.

Control Statements

1. Write a program to find out the sum of first n natural numbers.
Take n as input from the user.

2. Write a program to check whether the given number is a perfect number or not.
A number is called as a perfect number if the sum of the factors of that number is equal to the same number. Example: 6 = 1 + 2 + 3

3. Write a program to find the sum of numbers in a given range.

4. Write a program to calculate the sum of the digits of a given number.

5. Develop a program which adds all numbers from 1 to N, except those which are divisible by 5.

Note: Implement this using for loop and continue statement.

6. Develop a program to find factorial of a number N using for loop.
7. Develop a program to find sum of all odd numbers upto N using while loop.

8. Write a Program to find if a given number is Armstrong number.
Hint: (153 = 1^3 + 5^3 + 3^3)

9. Write a program to find whether given number is palindrome or not.

10. Write a program to display the pattern like right angle triangle as shown pattern below.

```
1
12
123
1234
```

11. Write a program to display the pattern like right angle triangle as shown pattern below.

```
1
22
333
4444
```

12. Write a program to display the pattern like right angle triangle as shown pattern below.

```
1
2 3
4 5 6
7 8 9 10
```

Functions

1. Write a program to find the GCD of two numbers.
   Take two integers as input, find the GCD and return it to main.

2. Write a program to print the prime Fibonacci numbers in a given range.

3. Take the range of numbers as input and print all the prime Fibonacci numbers as output. Use Functions. Try with non-recursive and recursive functions.
4. Write a program to reverse an integer number.

5. Write a function to find factorial of a number.
6. Write a function to swap contents of two variables using functions
7. Create a function that can accept two arguments - name & age and display them.
8. Define a function to check whether a given number is prime or not, and display appropriate messages.

9. Define a function to check whether a given number is prime or not, and return True if number is prime else return False.

Arrays

1. Write a program to find the sum of all array elements.
2. Write a program to count the frequency of each number in a 1-D array. All the elements in the array are integers.
3. Write a Program to display one dimensional array elements
4. Write a Program to Find Greatest Element in Array in one dimensional array
5. Write a Program to Reversing the 1-D Array Elements
6. Write a Program to sort elements in 1-D Array
7. Write a program to remove the duplicate elements in an integer array.
8. Write a Program to display two-dimensional array elements
9. Write a program to copy the elements of one 1-D array to another 1-D array.
10. Write a program to sum two 2-D matrices