Lab Assignment

Faculty Name : Dr. Rohini Basak

PART 1

Ass. No.	Assignment
1.	Take 2 numbers and swap their values by using a third variable.
2.	Now perform the swapping without using a third variable.
3.	Take the length and breadth of a rectangular wire as input from user. Print its area and perimeter. Now the same wire is bent to form a circle. Calculate the radius of the circle.
4.	Check whether a year is leap year or not. Example: 2000, 2012.
5.	Take 3 numbers and print the highest.
6.	Input the Cost Price (CP) and Selling Price (SP) of an article. Now calculate the gain or loss percentage.
7.	Calculate the average of all the numbers between m and n. m, n will be given by user as input through the keyboard.
8.	Print the multiplication table of a number n. Take n as input from user.
9.	Take a number and print its factorial. Example: 4!= 24 (4*3*2*1=24)
10.	Take a number and calculate the sum of its digits. Example: 148 (1+4+8=13)
11.	Take a number and calculate the number of digits present in it. Example: 716. (No. of digits=3)
12.	Take a number and reverse it. Now check whether the original number and the reversed number are equal or not. If they are equal, print "**Palindrome**". Otherwise print "Not Palindrome". Example: 121 is a Palindrome Number.
13.	Take a and b as input from user. Now calculate a^b. Example: a=3, b=2. Output: $3^2=9$.
14.	Generate **Fibonacci** numbers up to n terms. n will be entered by user. 0,1,1,2,3,5,8,13,21…….
15.	Take a number and check whether it is **Armstrong** or not. Example: 153. ($1^3+5^3+3^3=153$))
16.	Take a number and check whether it is **Peterson** or not. Example: 145. (1!+4!+5!=145)
17.	Check whether a number is **perfect square** or not. Example: $25=5^2$,$121=11^2$.
18.	Take a number and check whether it is **Prime** or not.
19.	Take a number and check whether it is a **power of 2** or not. Example: 2,4,16,64,256.
20.	Take a number and find the sum of all the factors of it. Now check whether the sum is equal to the original number or not. If equal print "**Perfect Number**". Otherwise print "Not Perfect". Example: 6. Factors of 6 are 1,2 and 3. 1+2+3=6.

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	Take a number in binary and convert it to decimal. Example: $(1100)_2 = (12)_{10}$ 123=Not in Binary.
22.	Find the GCD (**Greatest Common Divisor**) of 2 numbers. Hence find their **LCM**. GCD(10,15)=5. LCM(10,15)=30
23.	Find the sum of the following series. i) 1+4+9+16+…….. n terms. ii) 1+(1+2)+(1+2+3)+(1+2+3+4)+……. n terms. iii) 2+4+8+16+32+64+…… n terms. iv) 1.2+2.3+3.4+4.5+…… n terms v) $x-x^2/2!+x^3/3!-x^4/4!+x^5/5!-$…… n terms. n will be given by user in each case.
24.	Print the following patterns by writing separate C programs. i) 1 21 321 4321 54321 ii) 55555 4444 333 22 1 iii) ***** **** *** ** * iv) 1 121 12321 1234321 123454321 v) 101010101 1010101 10101 101 1