Practical Number	04
Areas covered	Selection and iteration control structures

Part A

Switch Statements

Q1) Use If-Else and write a program that reads an integer and determines and prints if the number is even or odd. (i.e. divisible by 2)

Re-write the above program using a switch statement instead of an If-Else statement!

Q2) Write a simple menu driven calculator to perform (+ - / *) operations. (The program must display a menu to select the desired operator.)

Q3) Create a text-based, menu-driven program that allows the user to choose whether to calculate the circumference of a circle, the area of a circle or the volume of a sphere. The program should then input a radius from the user, perform the appropriate calculation and display the result.

Q4) Write a C program to read a character from the user and determine whether the given letter is vowel or not. (Use a switch statement which also includes ‘default’ state).

Q5) Write a C program to enter month number and print total number of days in month using switch case. First assume that the given month belongs to a non-leap year.

Loops (While, Do..While, For)

Part B

Section A

Q1) Write a C program to print numbers from 0 to 100. (You are required to write 3 separate answers each using While, Do..While, For, looping structures).

Q2) Write a C program to calculate and print the total of 10 marks and the average. If the average is less than 50 program should print “Fail!” otherwise “Pass!”

Q3) Write a C program to calculate factorial of a user given number.

Hint:

- Select an appropriate looping structure.
- Factorial of ‘0’ is ‘1’ (0! = 1)
- Ex: factorial of number 5 is calculated as 5! = 5*4*3*2*1

Q4) Write a C program to calculate the sum of all digits of a user given number.

- If user input 123 your program should output 6. (calculated as 1+2+3)

Q5) Write a C program to reverse the digits of a number using *do-while* statement.

Q6) Write a C program to calculate nth power of a given integer. The user input base and exponent. (Do NOT use inbuilt functions, instead use a loop)

Q7) Write a C program to print first 10 numbers of “Fibonacci Sequence”.

Q8) Write a C program to check whether a given number is an Armstrong Number! (Refer to previous flowcharts)

Q9) Write a C program to print all the ASCII values for letters A to Z.

Q10) Write a program to print this pattern.

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Q11) Write a program to check whether a given number is prime or not.

Q12) Write a C program to print all factors of a given integer.

Q12) Write a C program to add all user inputs until user input '-1'. And then display the sum.

Q13) Write a C program to read user inputs for an integer array (size = 10) and print the array.

Q14) Re-Write the above code to count all the even numbers in above integer array and display the count.

Section B

1. Input 10 numbers and to output number of positive, number of negative, number of zeros.

2. Input Marks of 10 students and output the maximum , minimum and average Marks.

3. Input price of 10 items and display the average value of an Item , number of items which the price is greater than 200.

4. Input the Employee no and the Basic Salary of the Employees in an organisation ending with the dummy value -999 for Employee no and count the number Employees whose Basic Salary >=5000.

5. Input employee number, and hours worked by employees, and to display the following:

Employee number, Over Time Payment, and the percentage of employees whose Over Time Payment exceeding the Rs. 4000/-.

The user should input –999 as employee number to end the program, and the normal Over Time Rate is Rs.150 per hour and Rs. 200 per hour for hours in excess of 40.