LOOPS and Switch Case

1. A number is called a perfect number, if the number is equal to the sum of all its positive divisors except the number itself. For example, 6 = 1 + 2 + 3, 28 = 1 + 2+ 4 + 7 + 14 are the two perfect numbers. Find and print all the perfect numbers less than or equal to 1000.
2. Find the sum of the first n terms of the following series.
   $1 + x + x^2/2! + x^3/3! + \ldots.$
   [Hint: Value of x and n is input by user. Do not use the factorial or power functions available in math.h]
3. Read any 4 digit number and print the sum of its digits.
4. Read n integers and print the third largest among them. n is input by user. Don't use any array.
5. Write a program that reads three integers representing time of a day. The integers are SS, MM, HH, representing seconds, minutes and hours. Write a program to print "valid time" if the integers represent a valid time of the day.
6. Read an integer number and convert it to its hexadecimal equivalent representation.
7. Read a sequence of characters (terminated by new line character '\n') and count the number of vowels entered.
8. Write a C program to do the following.
   - Read the mark (maximum 100) obtained by a student in a subject.
   - Convert the mark entered to an appropriate grade as per the following scheme.
     i) Grade = X if mark is greater than or equal to 90
     ii) Grade = A if mark is between 80 to 89 Page | 19
     iii) Grade = B if mark is between 70 to 79
     iv) Grade =C if mark is between 60 to 69
     v) Grade = D if mark is between 50 to 59
     vi) Grade = P if mark is between 35 to 49.
     vii)Else the grade is F.

9. Read the symbol of a binary arithmetic operator (such as +, -, *, /) and its two operands from the keyboard and perform the operation on those two operands depending upon the operator entered by the user. Print the result accordingly.

HOTS (For Advance Learner)

1. Write a program to compute and print the taxi fare based on the following chart. Total number of Kilometers traveled will be input by the user as a floating point number. First 12 KM: Rs. 100/- Next 4 KM: Rs. 8 / KM Next 4 KM: Rs 6 / KM Above 20 KM: Rs 5 / KM
2. A point in a plane can be represented by its X and Y coordinates. Write C programs to do the following. i) Read the coordinates of a pair of points and find the distance between these two points and print the result. ii) Read the coordinates of three points and then check whether they can constitute a triangle. If so, find the area and perimeter of the triangle and check whether it is a scalene, isosceles or a equilateral triangle.