# COMPUTER APPLICATION

## CLASS X

## SAMPLE PAPER

**ATTEMPT ANY 4 PROGRAMS**                                    **FULL MARKS: 60**

### Program 1

Write a menu driven program to perform the following task:

a) Sum = 1 + (1+2) + (1+2+3) + ....... + (1+2+3+ ....... + n)

b) Print the series: 1, 2, 4, 7, 11,......n term

### Program 2

Write a program to input a number and print whether the number is a special number or not.
(A number is said to be a special number, if the sum of the factorial of the digits of the number is same as the original number).
Example: 145 is a special number, because l! + 4! + 5! = 1+24+120 = 145
(Where ! stands for factorial of the number and the factorial value of a number is the product of all integers from 1 to that number, example 5! = 1*2*3*4*5 = 120).

### Program 3

Write a menu driven program to accept a number from the user and check whether it is a Palindrome or a Perfect number.
(a) Palindrome number: (A number is a Palindrome which when read in reverse order is same as in the right order)
Example: 11, 101, 151 etc.
(b) Perfect number: (A number is called Perfect if it is equal to the sum of its factors other than the number itself.)
Example: 6 = 1 + 2 + 3

**Program 4**

Write a program to input a number. Display the product of the successors of even digits of the number entered by user.
Input: 2745
Output: 15
[Hint: The even digits are: 2 and 4
The product of successor of even digits is: 3*5= 15]

**Program 5**

Write a program to convert a decimal number to its binary equivalent using Scanner Class. Sample input: 23

Output: 10111

**Program 6**

Write a program to input a number and check whether it is a happy number or not. If you iterate the process of summing the squares of the decimal digits of a number and if this process terminates in 1, then the original number is called a happy number.

For example 31->3^2+1^1=10->1^2+0^2=1

**Program 7**

A Dudeney number is a positive integer that is a perfect cube such that the sum of its digits is equal to the cube root of the number. Write a program to input a number and check and print whether it is a Dudeney number or not.

Example:

Consider the number 512.

Sum of digits = 5 + 1 + 2 = 8
Cube root of 512 = 8

As Sum of digits = Cube root of Number hence 512 is a Dudeney number.