DATA STRUCTURES & ALGORITHMS 1

BATCH – B [FRIDAY JANUARY 18, 2019: 2:30 PM – 5:30 PM]

ASSIGNMENTS – 1 CODE: assign01

NOTES:

1) Please carefully read all assignments and there is no choice.
2) Each problem in this assignment has to be answered in the same c file.
3) Create a .c file following the file name convention:
   If your roll number is abc and assignment code is: assign01
   Then use the following file name convention as follows: abc-assign01.c
   For example, if the roll number is 92 and assignment code is assign01, then the file name should be 092-assign01.c
4) Strictly follow the file name convention.
5) Do not use scanf() or do not use unnecessary print statement. Just print only those you are asked to do in each assignment.

PROBLEMS [Total Marks: 20]:

1) **[Marks: 3]**
   Compute the sum of first 20 even numbers that are divisible by 3 in [1... 500]
   Print the sum as the output.

2) **[Marks: 3]**
   Identify all integers that are divisible by 7 but not 2 in [1, 100].
   Print all integers.

3) **[Marks: 4]**
   Write a program that accepts a non negative integer and checks whether the number is a palindrome.

4) **[Marks: 5]**
   Write a program to count the number of even digits in a given number.
   Assume a large integer as your input. Print the count as the output.

5) **[Marks: 5]**
   An arithmetic progression (AP) is given by a, (a + d), (a + 2d), (a + 3d), ...
   where a = the first term, d = the common difference.
   For example, 1, 3, 5, 7, ... is an arithmetic progression with a = 1 and d = 2
   Write a program to generate an arithmetic progression up to n where n=100
   Compute the sum of the terms in this arithmetic progression. Please keep in mind that ‘a’ and ‘d’ are inputs provided by the user.

   Print the arithmetic progression and the sum, each in a separate line.
