

### Assignment 2(a) – Programming Fundamentals

1. Write a program to input name and marks of three tests of a student and calculate and print the name and average of best two test marks.
2. Write a program to determine whether the entered character is in upper case or lower case, or is an invalid character.
3. Write a program to calculate the total salary of a person. The user has to enter the basic and the grade and depending upon which the total salary is calculated as:

$t\_sal = basic + hra + da + allow - pf$   
where :       $hra = 20\% \text{ of basic}$   
                  $da = 50\% \text{ of basic}$   
                  $allow = 1700 \text{ if grade} = 'A'$   
                  $allow = 1500 \text{ if grade} = 'B'$   
                  $allow = 1300 \text{ if grade} = 'C'$   
                  $pf = 11\% \text{ of basic.}$

4. Write a program to calculate the roots of a quadratic equation  $2ax+bx+c=0$ , display them on the screen specifying their nature.
5. Given a binary number convert it into decimal.
6. Write a program to input a number and print the sum of all its even digits and sum of all its odd digits separately.
7. Write a program to find  $x^n$ . Take x and n from the user.
8. Write a program to generate the reverse of a given number.
9. Write the programs to print the following patterns:

a. 1  
  11  
  111  
  1111  
  11111

c. 1  
  11  
  121  
  1221  
  1222

b. 1  
  11  
  202  
  3003  
  40004

d. 12345  
  1234  
  123  
  12  
  1