Note: Answer all the questions.
            Assume suitable missing data, if any.

Q1 (a) Write an algorithm to convert decimal number to binary equivalent number.   2

    (b) Draw the flowchart to illustrate **the concept of switch.**   2

Q2 What is a union? Define a structure *'Cricket'* that will describe the following information.
    Player name, team name and batting average. Using Cricket, declare an array with 50 elements and write a program to read the information about all the players and print a team wise list containing names of player with their batting average.   4

Q3 (a) What is a function call? Explain the concept of call by value and call by reference with an example.   3

    (b) What is two dimensional Array? How 2-D array is initialied?   1

Q4 (a) A square matrix, that is, one having the same number of rows and columns, is called a diagonal matrix if its only non-zero elements are on the diagonal from upper left to lower right. It is called upper triangular, if all elements below the diagonal are zeros, and lower triangular, if all elements above the diagonal are zeros. Write a program that reads a matrix and determines if it is one of these three special matrices.   3

    (b) What is the difference between main() function, library function and user-defined function?   1

Q5 Evaluate the following expressions with explanation: 1+1+2
    (a) printf("\nab");
         printf("\bsi");

(b)
```
main()
{        int x;

         x= -3*-4%-6/-5;
         printf("x=%d",x);

}
```

(c)
```
main()
{        struct a
                {        int i;
                         int j;
                };
         struct b
         {        char x;
                  char y ;
         };
         union c
         {        struct a aa;
                  struct b bb;
         };
         union c u;
         u.aa.i=256;
         u.aa.j=512;
         printf("%d%d",u.aa.i,u.aa.j);
         printf ("%d%d",u.bb.x, u.bb.y);

}
```