Procedure

1. C Program:

```
#include<stdio.h> char arr[26][26]; char
message[22],key[22],emessage[22],retMessage[22]; int
findRow(char);
int findColumn(char);
int findDecRow(char,int);
int main() {
    int i=0,j,k,r,c;
    clrscr(); k=96;

    for (i=0;i<26;i++) {
            k++;
            for (j=0;j<26;j++) {
                    arr[i][j]=k++;
                    if(k==123)
                       k=97;

            }
    }

    printf("\nEnter message\n");
    gets(message);
    printf("\nEnter the key\n");
    gets(key);
    // Encryption
```

```
    for (i=0;key[i]!=NULL;i++) {
            c=findRow(key[i]);
            r=findColumn(message[i]);
            emessage[i]=arr[r][c];
    }
    emessage[i]='\0';
    printf("\n Encrypted message is:\n\n"); for
    (i=0;emessage[i]!=NULL;i++)
    printf("%c",emessage[i]);
    //decryption
    for (i=0;key[i]!=NULL;i++) { c=findColumn(key[i]); r=findDecRow(emessage[i],c);
            retMessage[i]=arr[r][0];
    }
    retMessage[i]='\0';
    printf("\n\nMessage Retrieved is:\n\n");
    for (i=0;retMessage[i]!=NULL;i++)
    printf("%c",retMessage[i]); getch();
    return(0);
}

int findRow(char c) {
    int i;
    for (i=0;i<26;i++) {
            if(arr[0][i]==c)
              return(i);
```

```
    }
}

int findColumn(char c) {
    int i;
    for (i=0;i<26;i++) {
            if(arr[i][0]==c)
              return(i);
    }
}
int findDecRow(char c,int j) {
    int i;
    for (i=0;i<26;i++) {
            if(arr[i][j]==c)
              return(i);
    }
}
```

2.Output: