

/\*a) Write C++ program to draw 3-D cube and perform following transformations on it using OpenGL i) Scaling ii) Translation iii) Rotation about an axis (X/Y/Z).

OR

b) Write OpenGL program to draw Sun Rise and Sunset.\*/

```
#include<iostream>
#include<graphics.h>
#include<cstdlib>
#include<dos.h>
#include<cmath>
using namespace std;

int main()
{
    initwindow(800,500);
    int x0,y0;
    int gdriver = DETECT,gmode,errorcode;
    int xmax,ymax;

    errorcode=graphresult();

    if(errorcode!=0)
    {
        cout<<"Graphics error:"<<grapherrormsg(errorcode);
        cout<<"Press any ket to halt";
        exit(1);
    }
    int i,j;
    setbkcolor(BLUE);
    setcolor(RED);
    rectangle(0,0,getmaxx(),getmaxy());

    outtextxy(250,240,"::::PRESS ANY KEY TO CONTINUE::::");
    while(!kbhit());
    for(i=50,j=0;i<=250,j<=250;i+=5,j+=5)
    {
        delay(120);
        cleardevice();
        if(i<=150)
        {
            setcolor(YELLOW);
            setfillstyle(1,YELLOW);
            fillellipse(i,300-j,20,20);
        }
        else
        {
            setcolor(GREEN^RED);
            setfillstyle(1,GREEN^RED);
            fillellipse(i,300-j,20,20);
        }
    }
    delay(1000);
    cleardevice();
    setcolor(RED);
    setfillstyle(1,RED);
    fillellipse(300,50,20,20);
    delay(150);
```

```
int k, l;
for(k=305, l=55; k<=550, l<=300; k+=5, l+=5)
{
    delay(120);
    cleardevice();
    if(k<=450)
    {
        setcolor(GREEN^RED);
        setfillstyle(1, GREEN^RED);

        fillellipse(k, l, 20, 20);
    }
    else
    {
        setcolor(YELLOW);
        setfillstyle(1, YELLOW);
        fillellipse(k, l, 20, 20);
    }
}
return 0;
}
```