AIM:-*To design automatic led Diwali lights (consisting of 6 LED’S) such that it only works during night and can generate two patterns which can be toggled with a switch a. Pattern 1- LED blinks with a frequency of 500msec b. Pattern 2-LED blinks with a freq. of 1 sec.*

COMPONENTS REQUIRED:

*Arduino Uno, LDR, 6 LED’S, 2 resistors, Breadboard, connecting wires*

THEORY:

Concept used: *The design is based on the working of LDR (photoresistor). It is a variable resistance component that varies it’s resistance value with the change in intensity of light and it works on the photoconductivity principle. Depending upon the sensing of LDR ,LED’S blink.*

Learning and observations:*Here we get to learn about the sensor abilities of LDR and the principle of varying of resistance on which the working of LED depends.*

*Here we observe that LED’S start blinking when the light level/light intensity is low and they stop blinking when the light intensity reaches some level.*

CODE:

int lightleve;l

int led;

void setup()

{

pinMode(13, OUTPUT);

pinMode(12, OUTPUT);

pinMode(11, OUTPUT);

pinMode(10, OUTPUT);

pinMode(9, OUTPUT);

pinMode(8, OUTPUT);

pinMode(7, INPUT);

serial.begin(9600);

}

void loop()

{

lightlevel=analog read(AO);

serialprintIn(lightlevel,DEC);

delay(500);

if(light<300)

{

if(toggle==1)

{

for(int i=8;i<=13;i++)

{

digitalwrite(i,HIGH);

delay(500);

digitalwrite(i,LOW);

delay(500);

}

}

else

{

for(int i=3;i<=10;i++)

{

digitalwrite(i,HIGH);

delay(1000);

digitalwrite(i,LOW);

delay(1000);

}

}

}

}

PROBLEMS AND TROUBLE SHOOTING:

*1.Problem in making connections – got more precisely in it*

*2.Errors in coding for the switching of two patterns-then used looping for the removal of error*

PRECAUTIONS:

1.*While plugging the USB from the port pull the plug and not the cable.*

*2.Connections msut be according to the coding done.*

*3.Handle the apparatus carefully.*

LEARNING OUTCOMES:

*Here we got to learn about the working of LDR depending upon light intensity and also we got to learn about the working of ARDUINO UNO and how to use the BREADBOARD .Also making connections with the various electrical components.*

DIAGRAM:

