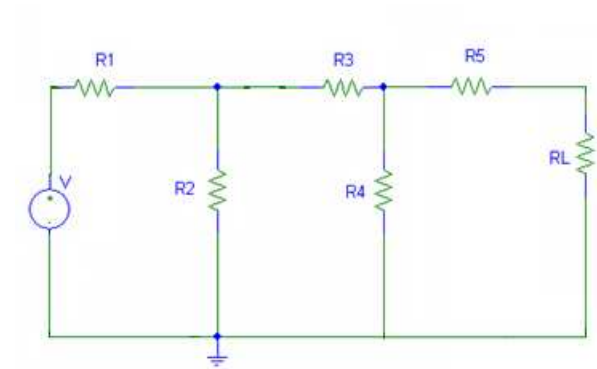


## AIM : TO VERIFY MAXIMUM POWER TRANSFER THEOREM

### CIRCUIT DIAGRAM :



### PROGRAM

```
/* MAXIMUM POWER TRANSFER THEOREM */

void main()
{
    float R1,R2,R3,R4,R5,RL,Rt,Rth,Req,V,Vth,I;
    clrscr();

    printf("\nEnter Values of R1,R2,R3,R4,R5 (ohm) & Voltage(V)
    respectively :\n");
    scanf("%f %f %f %f %f %f",&R1,&R2,&R3,&R4,&R5,&V);

    printf("\n\nThe value of Rth : ");
    Rt = (R1*R2/(R1+R2))+R3;
    Rth = (Rt*R4/(Rt+R4))+R5;
    printf("%f ohm",Rth);

    printf("\n\nThe value of Vth : ");
    Req = R1 + (R2*(R3+R4))/(R2+R3+R4);
    Vth = (V*R2*R4)/(Req*(R2+R3+R4));
    printf("%f V",Vth);

    I = Vth/(Rth+RL);

    printf("\n\n(1) Enter Value of RL (RL < Rth) (ohm): ");
    scanf("%f",&RL);
    I = Vth/(Rth+RL);
    printf("\nCurrent : %f A      Power : %f watt",I,I*I*RL);

    printf("\n\n(2) Enter Value of RL (RL = Rth) (ohm): ");
    scanf("%f",&RL);
    I = Vth/(Rth+RL);
    printf("\nCurrent : %f A      Power : %f watt",I,I*I*RL);

    printf("\n\n(3) Enter Value of RL (RL > Rth) (ohm): ");
    scanf("%f",&RL);
    I = Vth/(Rth+RL);
```

```
printf("\nCurrent : %f A    Power : %f watt",I,I*I*RL);

printf("\n\n\nSo from (1),(2)&(3), we came to know that the power
transfer is maximum in case of RL=Rth");

getch();
}
```

**SAMPLE OUTPUT :**

Enter Values of R1,R2,R3,R4,R5 (ohm) & Voltage(V) respectively :

1000 2200 4700 6800 1000 10

The value of Rth : 4005.848730 ohm

The value of Vth : 3.835897 V

(1) Enter Value of RL (RL < Rth) (ohm): 2010.1003

Current : 0.000638 A Power : 0.000817 watt

(2) Enter Value of RL (RL = Rth) (ohm): 4005.95

Current : 0.000479 A Power : 0.000918 watt

(3) Enter Value of RL (RL > Rth) (ohm): 6800

Current : 0.000355 A Power : 0.000857 watt

So from (1),(2)&(3), we came to know that the power transfer is maximum in case of RL=Rth