

Course Name:	Elements of Electrical and Electronics Engineering	Semester:	I/II
Date of Performance:	28/4/2022	Batch No:	E1
Faculty Name:		Roll No:	16010321005
Faculty Sign & Date:		Grade/Marks:	/ 25

Experiment No: 4

Title: Maximum Power Transfer Theorem

Aim and Objective of the Experiment:

- To observe maximum power transfer in D.C. circuit.

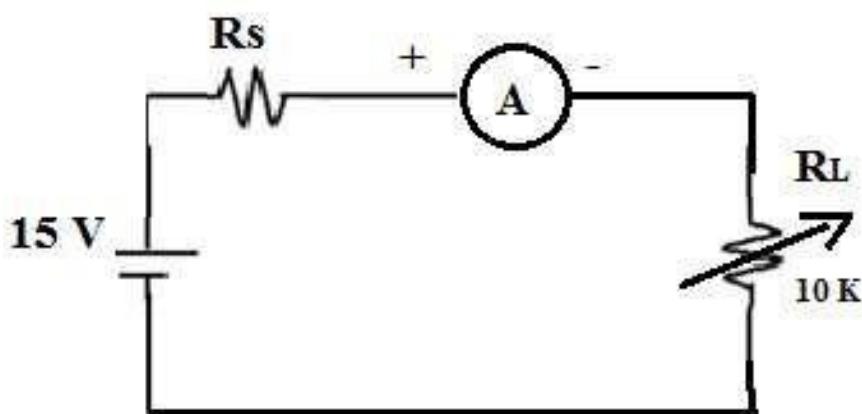
COs to be achieved:

CO1: Analyze resistive networks excited by DC sources using various network theorems.

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Circuit Diagram/ Block Diagram:

Circuit Diagram



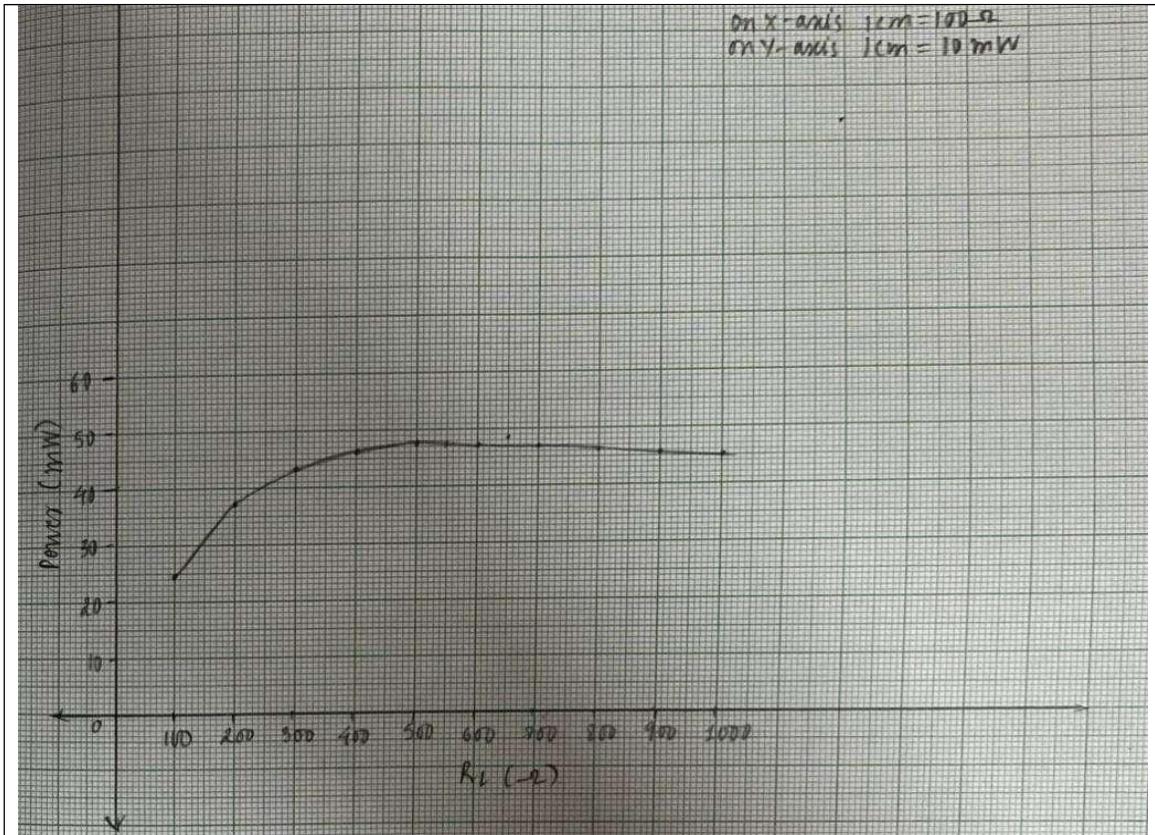
Stepwise-Procedure:

1. Set D.C. supply voltage $V = 15 \text{ V}$.
2. Vary \square_L in the range $50 \Omega - 10 \text{ K}\Omega$ in steps of 100Ω .
3. Note down I_L \square_L V_L for each value of \square_L . Where I_L \square_L V_L are current through \square_L and voltage across \square_L respectively.
4. Prepare observation table showing readings of \square_L \square \square \square \square $= I_L \cdot \square_L$
5. Plot graph of \square \square \square \square_L
6. Locate the point of maximum value of power \square and note down corresponding value of \square_L .
- . Verify the results theoretically

Observation Table:

Sr. No.	Value of R_L (Ω)	Value of V_L (V)	Load current I_L (mA)	Power $P_L = (I_L)^2 R_L$ (Watts)
1	100	1.54	16	0.02464
2	200	2.66	14	0.03724
3	300	3.59	12	0.04308
4	400	4.25	11	0.04675
5	500	4.79	10	0.0479
6	550	5.03	9.5	0.04778
7	600	5.24	9.1	0.04768
8	650	5.44	9	0.04896
9	700	5.64	8.5	0.04794
10	800	5.95	8	0.0476
11	900	6.23	7.5	0.04672
12	1000	6.47	7	0.04529

Screenshot of Output:



Conclusion:

Hence, we have understood and verified maximum power transfer theorem.

Signature of faculty in-charge with Date: