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| **Course Name:** | **Elements of Electrical and Electronics Engineering** | **Semester:** | **I** |
| **Date of Performance:** | **22/ 11 / 2022** | **Batch No:** | **C3-3** |
| **Faculty Name:** |  | **Roll No:** | **16010122221** |
| **Faculty Sign & Date:** |  | **Grade/Marks:** | **/ 25** |

**Experiment No: 5**

**Title:Maximum Power Transfer Theorem**

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| **Aim and Objective of the Experiment:** |
| * To observe maximum power transfer in D.C. circuit. |

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| **COs to be achieved:** |
| **CO1:**Analyze resistive networks excited by DC sources using various networktheorems.. |

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| **Circuit Diagram/ Block Diagram:** |
| **Circuit Diagram: Vs = 50 V and Rs =500 Ω** |

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| **Stepwise-Procedure:** |
| 1.Set D.C. supply voltage V= 15 V.  2. Vary in the range 50 Ω - 10 KΩ in steps of 100 Ω.  3. Note down for each value of Where are current through and voltage across respectively.  4. Prepare observation table showing readings of : .  5. Plot graph of  6. Locate the point of maximum value of power and note down corresponding value of  . Verify the results theoretically |

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| **Observation Table:Vth= 100 V and Rth = 500 Ω** |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Sr No | RLΩ | Circuit voltage (vL) mv | | Power absorbed by load (PL) W  PL =(VL)2/RL | | | Th | Pr | Th | Pr | |  | 100 |  | 0.25 |  | 5.208 | |  | 200 |  | 0.42 |  | 8.820 | |  | 300 |  | 0.65 |  | 14.08 | |  | 400 |  | 0.80 |  | 16.00 | |  | 500 |  | 1.04 |  | 21.632 | |  | 600 |  | 1.1 |  | 20.166 | |  | 700 |  | 1.14 |  | 18.077 | |  | 800 |  | 1.21 |  | 18.034 | |  | 900 |  | 1.38 |  | 17.011 | |  | 1 K |  | 1.33 |  |  | |
| **C:\Users\Lenovo.DESKTOP-7CUGLFM\Downloads\WhatsApp Image 2022-11-15 at 09.11.08.jpeg**  **Reading in lab** |
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| **Graph:**  **C:\Users\Lenovo.DESKTOP-7CUGLFM\OneDrive\Pictures\Screenshots\2022-11-15 (4).png** |
| **Conclusion:** |
| maximum power transfer in D.C. circuit. Is 21.632 |

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| **Signature of faculty in-charge with Date:** |