| **Course Name:** | **Elements of Electrical and Electronics Engineering** | **Semester:** | **I** |
| --- | --- | --- | --- |
| **Date of Performance:** | **22 / 11 / 2022** | **Batch No:** | **C2-2** |
| **Faculty Name:** | **Jyoti Varavedkar** | **Roll No:** | **16010122109** |
| **Faculty Sign & Date:** |  | **Grade/Marks:** | **/ 25** |

**Experiment No: 5**

**Title:** **Maximum Power Transfer Theorem**

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

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

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

| **Stepwise-Procedure:** |
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| 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 |

| **Observation Table: Rth = 815 Ω** |
| --- |
| | Sr No | RL Ω | Circuit Current (IL) mA | | Power absorbed by load (PL) W  PL = I2.RL | | | --- | --- | --- | --- | --- | --- | | Th | Pr | Th (\*10^4) | Pr (\*10^4) | |  | 238 | 14.78 | 14.68 | 5.2 | 4.6 | |  | 365 | 12.66 | 12.85 | 5.8 | 6.2 | |  | 557 | 10.89 | 11.08 | 6.6 | 6.6 | |  | 700 | 9.87 | 9.80 | 6.81 | 6.8 | |  | 815 | 9.17 | 9.25 | 6.85 | 6.9 | |  | 1060 | 7.98 | 8.20 | 6.7 | 6.8 | |  | 2030 | 5.26 | 5.28 | 5.6 | 5.9 | |  | 3050 | 3.88 | 3.82 | 4.5 | 4.6 | |  | 4030 | 3.09 | 3.11 | 3.8 | 3.9 | |  | 5040 | 2.56 | 2.56 | 3.3 | 3.3 | |
| **Output Snap:** |

| **Graph:** |
| --- |
| **Conclusion:** |
| By this experiment we get to know about the maximum power transfer in D.C. circuit. |

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