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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 1: Introduction to LTSpice**

1. **Take screen shot of the Circuit:**
2. **Take screen shot of the DC operating point:**

1. **Run DC sweep and take a screen shot of V1:**
2. **Run DC sweep and take a screen shot of Vout:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 2: Diode I-V characteristic**

1. **Take screen shot of the Circuit:**

1. **Run DC sweep and take a screen shot of the current in the diode (ID):**
2. **Run DC sweep and take a screen shot of the voltage across the diode (VD):**
3. **Run DC sweep, then Plot VD on X-axis vs ID on Y-axis graph and take screen shot of the result:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 3: Zener diode**

1. **Take screen shot of the Circuit:**

1. **Run DC sweep and take a screen shot of the voltage across the Zener diode:**
2. **Take screen shot of the Circuit after adding another Zener diode (Fig. 3.3):**
3. **Run DC sweep, then take a screen shot of the voltage across the two diodes together:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 4: BJT I-V characteristics**

1. **Take screen shot of the Circuit:**

1. **Run DC sweep and take a screen shot of the base current (Ib) of the transistor:**
2. **Run DC sweep and take a screen shot of the collector current (Ic) of the transistor:**
3. **Plot the I-V characteristics curves IC vs V1 for each V2, and take screen shot of the results.**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 5: Bridge rectifier**

1. **Take screen shot of the Circuit:**

1. **Run transient responce and take a screen shot of the voltage over R1:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 6: BJT amplifiers (common emitter)**

1. **Take screen shot of the Circuit:**
2. **Run DC operating point and check the voltages and currents in the circuit.**
3. **Calculate VBE. What is the mode of operation of this transistor.**
4. **Measure the voltage VIN.**
5. **Measure the voltage VOUT.**
6. **Comment on the results.**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 7: BJT amplifiers (common base)**

1. **Take screen shot of the Circuit:**
2. **Run DC operating point and check the voltages and currents in the circuit.**
3. **Calculate VBE. What is the mode of operation of this transistor.**
4. **Measure the voltage VIN.**
5. **Measure the voltage VOUT.**
6. **Comment on the results.**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 8: MOSFET I-V characteristics**

1. **Take screen shot of the Circuit:**

1. **Run DC sweep and take a screen shot of ID VS V1:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 9: Common source amplifier**

1. **Take screen shot of the Circuit:**

1. **Run transient response and take a screen shot Vout and V1 on the same graph:**
2. **Run transient response and take a screen shot Iout and I1 on the same graph:**

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| **Name:** |  | **ID No.:** |  |
| **Date:** |  | **Slot Number:** |  |

**Lab 10: Differential amplifier**

1. **Take screen shot of the Circuit:**

1. **Run transient response and take a screen shot Vout:**
2. **Run transient response and take a screen shot V1:**
3. **Comment on the result:**