**FYUGP B. Sc 2nd Semester SEC Examination, 2025**

**Paper: Basic Skills on Electronic Equipment (SEC0200903)**

**Marks: 25** **Time: 1.5 Hours**

**A. Answer the following questions (any five):** $2 \times 5 = 10$

1. Explain the terms: (a) resistance and resistivity (b) conductance and conductivity
2. What are active and passive components? Give examples.
3. Draw the forward biased and reverse biased connection of a diode.
4. What is soldering and desoldering
5. What is the use of de-soldering pump?
6. How do you calculate the vernier constant of a slide calliper?
7. Draw the symbol of (a) junction diode (b) p-n-p transistor (c) n-p-n transistor (d) battery

**B. Answer the following questions (any five):** $3 \times 5 = 15$

1. Use proper circuit diagram to describe the working of a bridge rectifier.
2. Derive the Ohm's Law relating voltage and current for simple electrical circuit.
3. Differentiate between the series and parallel LCR circuit. Write down the expression for their resonance frequencies.
4. Explain the term least count in the case of a screw gauge. Describe how we can measure the diameter of a pen using a screw gauge.
5. Describe briefly about the tools and accessories required for soldering.
6. Describe the principle of regulated power supply.
7. What is a PCB? Describe the steps involved in development of PCB using $FeCl_3$.
8. Use a proper circuit diagram to explain the working principle of a meter bridge.
9. Obtain the equivalent resistance of the following combination of resistances:

