SEMESTER: 6ᵗʰ   **STREAM: Program Course (DSE)**
PAPER CODE: PHY-G-DSE-P-02   **Paper: Digital, Analog Circuits and**
                                                                          Instrumentation

Full marks: 20

Answer Any Four questions of the following: **4×5=20**

1. Explain the I-V characteristics of a PN junction diode both in forward and reverse bias condition.

2. Draw the I-V characteristics of a Zener diode. What do you understand by avalanche and Zener break down?

3. Draw the logic circuit of AND, OR, NOT gate using NAND and NOR gates, respectively.

4. Draw the experimental circuit to study the CE characteristics of a BJT. Draw the output characteristics curve explaining different region.

5. Explain the operation of a AND, OR gate using Diodes.

6. Explain the operation of an OP-amp as inverting amplifier. What are the characteristics of an ideal op-amp?

7. Explain the operation of an OP-amp as non-inverting amplifier. How will you study its frequency response?

8. Add the binary numbers 111010 and 101101 using binary Adders.