Set B (CA 2) **BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (ECE 131)**

NOTE: Attempt ALL Questions **Max Marks: 30 (Each Question carries 5 Marks)**

Name:	Section:
Reg. No.:	Roll No.:
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Believe you can and you are halfway there.

1. A 30 KVA transformer has 300 turns on the primary and 50 turns on the secondary winding. The primary is connected to 1500 V, 50 Hz supply. Find
   1) the full load primary and secondary currents
   2) the secondary emf
   3) maximum flux in the core
2. Explain Core losses in a transformer? How to minimize these losses?
3. Explain how a rotating magnetic field makes the rotor of an induction motor to rotate?
4. Explain how the Zener diode acts as a voltage regulator? How it maintains the regulation with unregulated input or the variable load? Elaborate with suitable example.

5. Simplify the following Boolean expression:

$$A\left[B+\acute{C}\left(AB+\acute{A}\acute{C}\right)\right]$$

6. Explain the working of N channel Enhancement MOSFET with all necessary diagrams? What is the significance of the gate-source voltage?