

# SNS COLLEGE OF ENGINEERING



(An Autonomous Institution)

COIMBATORE

## 19EE308- ELECTRICAL ENGINEERING AND INSTRUMENTATION

III SEMESTER

QUESTION BANK

### **PART B&C**

#### **UNIT I:**

1. Characteristics of various types of DC Generator
2. Types of DC Motor,
3. Torque equation of DC Motor
3. Operating Principle of DC Shunt motor
4. Speed Control methods of DC Motors
5. Construction & operation of DC Generator
6. Conditions to build a back emf in DC motor.
7. Construction & operation of DC Motor
8. Characteristics of various types of DC Motor

#### **UNIT II:**

1. Construction and working principle of single phase transformer
2. OC and SC test of Single phase transformer
3. Tap changing in transformers
4. Types of testing of transformer
5. Deduce the equivalent circuit of a transformer
- 6., EMF equation

#### **UNIT III:**

1. Construction of Single Phase induction Machine
2. Starting Methods of Single phase induction motor
3. Torque slip characteristics of an induction motor and show starting torque and breakdown torque
4. Braking Methods in single phase induction machine.
5. Synchronous motor, equivalent circuit and phasor diagram
6. Speed Control methods of three-phase induction motor.
7. Construction and working principle of 3-phase Induction motor- Squirrel cage and slip ring Induction motor

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8. Starters in 3 phase Induction motors

### UNIT IV:

1. Static and Dynamic characteristics of measuring instruments
2. Generalise the requirements needed for the materials to be used in RTDs.
3. Detail about ADC and DAC converter
4. Thermistor and thermocouple
5. Classify three types of variable inductance transducers. Explain the working on the principle of change in self-inductance.
6. Types of errors in measuring instruments and how to correct them.
7. Transducer classification and the principle of operation
8. Explain the working principle of moving iron ammeter with necessary sketches.
9. Explain the working principle of moving coil instruments with necessary sketches.

### UNIT V:

1. Design and Explain the block diagram of UPS
2. Construct and explain Agricultural pumps
3. Construct and explain a block diagram of Electric Traction
4. Construct and explain a block diagram of the Electric Vehicle
5. Construct and explain a block diagram of Air Conditioning system