

**NETTUR TECHNICAL TRAINING FOUNDATION**  
**DIPLOMA IN ELECTRICAL & ELECTRONICS – CP23**  
**II SEMESTER REGULAR & SUPPLEMENTARY EXAMINATION-JUNE 2023**

**Subject: Electrical Circuit Analysis**

**Total Time: 2 Hr.**

**Subject Code: CP23204T**

**Total Marks: 50**

**PART B**

**1.0 ANSWER ANY EIGHT OF THE FOLLOWING**

**2\*8=16**

- 1.1 What are the two types of power sources?
- 1.2 State Thevenin's theorem
- 1.3 What do you mean by dielectric constant?
- 1.4 Define Inductance and write down its unit.
- 1.5 State 'Coulomb's Law'.
- 1.6 List the three reasons for the need of Polyphase circuits
- 1.7 Write the relation of phase and line quantities in star connection
- 1.8 What are the components of earthing system?
- 1.9 What are the main parts of Induction motor?
- 1.10 What is the difference between impedance and resistance?

**2.0 ANSWER ANY SIX OF THE FOLLOWING**

**3\*6=18**

- 2.1 Illustrate with example how to convert a voltage source to current source
- 2.2 Define junction, branch and loop in an electrical circuit with examples
- 2.3 Write a short note on Faraday's laws of electromagnetic induction.
- 2.4 Explain with diagrams what is meant by in phase, lagging and leading as applied to sinusoidal quantities.
- 2.5 Define apparent power, active power and reactive power along with its unit.
- 2.6 What is phase sequence and write its importance?
- 2.7 Write the working principle of DC generator.
- 2.8 Why we use DOL starter for starting of a 3 phase induction motor?

**3.0 ANSWER ANY FOUR OF THE FOLLOWING**

**4\*4=16**

- 3.1 Explain series and parallel connection of Inductors with neat sketch
- 3.2 Write down five analogy points between electric and magnetic field.
- 3.3 Draw and explain "charging & discharging of capacitor"
- 3.4 What is the need of earthing system?
- 3.5 Explain the concepts of open, closed and short circuit with proper diagram
- 3.6 Name all five types of inductors based on their classification.

