*Heaven's Light is Our Guide*

# Rajshahi University of Engineering & Technology

Department of Electrical & Computer Engineering

# Lab Report

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| Course Code | **ECE 1202** |
| Course Title | Circuit and Systems II Sessional |
| Date of Submission | 08-10-2024 |

| **Submitted By:** | **Submitted To:** |
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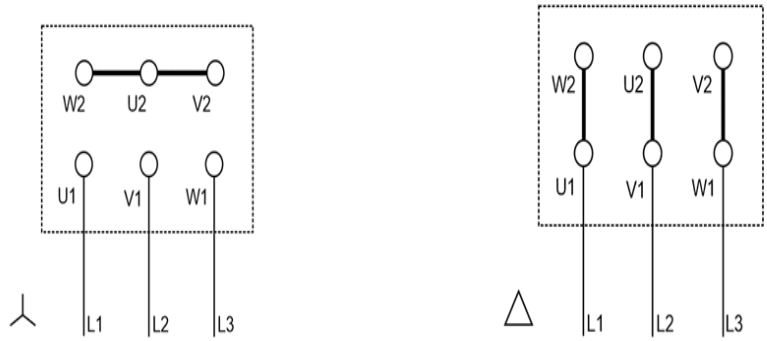
**Name of the Experiment**: Three phase sequence test using 6-phase induction motor.

**Theory:** The three-phase sequence test in a six-phase induction motor experiment evaluates the correct phase sequence (ABC or ACB) to ensure proper motor operation. In this test, the motor's terminal voltages and phase connections are checked to determine the rotation direction of the motor, which depends on the phase order. A correct phase sequence ensures smooth motor performance and prevents mechanical damage due to reverse rotation. The test is crucial in industrial applications to avoid issues such as reduced efficiency and overheating caused by incorrect sequence connections.

**Circuit diagram:**



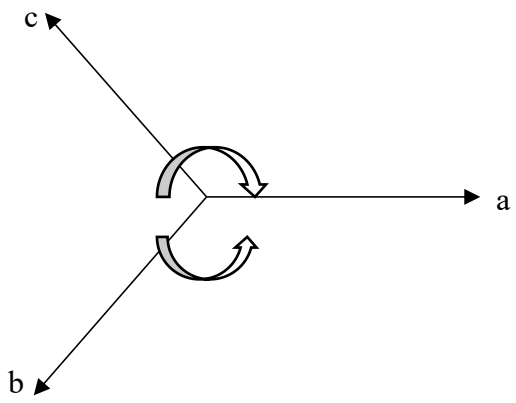




Fig : 3-phase sequence test using 6-phase induction motor

**Result:**

The six loads can act like three loads according to the interconnection between them. If the loads situated in a row are interconnected between them serially and they are not connected with the load situated in the next row, then this connection acts like wye connection of three phase. On the other hand, if each load is connected with the load situated in the next row, then this connection acts like delta connection of a three phase system. By connection the loads situated in the lower region with the motor, we can observe the rotation of the motor. When the connection between loads and motor is reversed, the rotation of the motor also changes. The rotation can be clockwise and anti clockwise interchanged.

**Conclusion:**

In the Three-Phase Sequence Test using a six-phase induction motor, the objective is to determine the phase sequence of the motor and observe its behavior under different sequence connections. The test demonstrates that the motor operates differently when connected in positive and negative phase sequences. In a positive sequence, the motor runs smoothly and efficiently, while in a negative sequence, the motor may experience reverse rotation or reduced efficiency. The experiment highlights the importance of maintaining correct phase sequence for proper motor performance and stability.