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| **DAY** | **TOPIC / SUB – TOPIC** | **RPK / OBJECTIVES** | **TEACHER – LEARNER ACTIVITIES** | **T/LSM** | **CORE POINTS** | **EVALUATION / REMARKS** |
| Mon | STAR / DELTA CONNECTION | **RPK**Students can solve problems involving power in single and 3 phase systems.**Objectives**By the end of the lesson, the student will be able to;* Analyze the relationship between star and delta connections.
* Solve problems involving line and phase voltage.
* Solve problems involving line and phase current.
 | Introduce the lesson by drawing star and delta circuits and asking students to identify them.Assist students to analyze the relationship between line voltage and phase voltage, line and phase current in star / delta connection.Assist students to understand how to set-up a facility to connect star and delta system.Assist students to take measurements of star / delta system and draw conclusion.Assist students to solve problems involving line and phase voltage, line and phase current of star / delta circuits.Go over the salient points and encourage students to ask questions. | Chalkboard illustrationScientific Calculator | **Delta connection**: A delta connection is a triangular arrangement in which all the 3 windings are in series and form a close a loop.**Star Connection:** In a star connection, the 3 windings are connected to a common point and neutral is taken from this common point.**Solving Problems in star / delta** Line current IL = $\sqrt{3} Iph$ In delta circuit VL = VphLine Voltage VL = $\sqrt{3} Vph$In star circuit IL = Iph | 1. Differentiate between star and delta connection.
2. Differentiate between line and phase voltage.
3. Three resistors each of 40Ω are connected in a star arrangement to a 415V 3 – phase star connected supply. Calculate the phase voltage, line current and the total power consumed by the circuit.
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| **DAY** | **TOPIC / SUB – TOPIC** | **RPK / OBJECTIVES** | **TEACHER – LEARNER ACTIVITIES** | **T/LSM** | **CORE POINTS** | **EVALUATION / REMARKS** |
| Fri | TRANSFORMERS | **RPK**Students know that electricity supplied to our homes pass through a transformer.**Objectives**By the end of the lesson, the student will be able to;* Identify types of transformers and describe their construction.
* Explain the principles of operation of a transformer.
* Solve problems involving transformation ratio.
 | Introduce the lesson by showing transformer model depicting the various types of transformers.Discuss the various types of transformers with students.Assist students to understand the principles of operation of the transformer.Assist students to understand how to set-up a facility to connect star and delta system.Assist students to solve problems involving transformation ratio.Go over the salient points and encourage students to ask questions. | Chalkboard illustrationScientific CalculatorRealia: Transformer Model/KitDigital Multimeter | **Transformer**: Is a device that increases or decreases the amplitude of an AC source.**Types of transformers:** Shell typeCore type**Category of transformers:**Step – upStep – down.**Operation of transformer**Transformers operate on the principles of mutual induction where a changing flux in the primary winding induces an emf in the secondary winding due to flux linkage.**Transformation ratio** $$\frac{Vp}{Vs} = \frac{Np}{Ns} = \frac{Is}{Ip}$$ | 1. What is a transformer?
2. Explain the principles of operation of a transformer
3. State and explain the 2 types of transformers.
4. Differentiate between step – up and step – down transformers.
5. A transformer has 240/24V rating. If the primary winding is 900 turns. Calculate the number of turns at the secondary winding.
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