Summary of Innovative Teaching Learning Brought in by the Faculty for Academic Year 2024-25

1. THINK-PAIR-SHARE

Faculty: J. Raju
Course: Power System (III–II)
Topic Covered: Economic Operation of Power System
Class: III-II
Academic year: 2024-25

Mr.J. Raju implemented an innovative **Think-Pair-Share** learning approach for B.Tech III–II students covering the Economic Operation of Power System. The teaching methodology emphasized collaborative problem-solving, peer discussion, and step-by-step analysis of economic dispatch and generation cost optimization. Students were actively involved in discussing concepts, sharing ideas with peers, and solving real-time problems, which helped in strengthening their conceptual understanding and application skills.

Outcomes:

- Enhanced conceptual clarity of economic operation and generation cost optimization.
- Improved problem-solving and analytical skills through peer collaboration.
- Increased engagement and participation in classroom discussions.
- Developed ability to apply theoretical concepts to practical power system scenarios.

2. DISCUSSION-BASED LEARNING APPROACH

Faculty Name: N. Kiran Kumar
Course: LSD (Linear and Special Drives)
Topic Covered: Speed Control Methods of Drives
Class: B-Tech III–II
Academic year: 2024-25

Mr. N. Kiran Kumar implemented an **interactive discussion-based learning approach** for B.Tech III–II students covering speed control methods of drives. The teaching methodology emphasized classroom discussions, critical analysis of drive systems, and collaborative problem-solving. Students were actively involved in debating concepts, analyzing different speed control techniques, and sharing solutions, which helped strengthen their theoretical understanding and application skills.

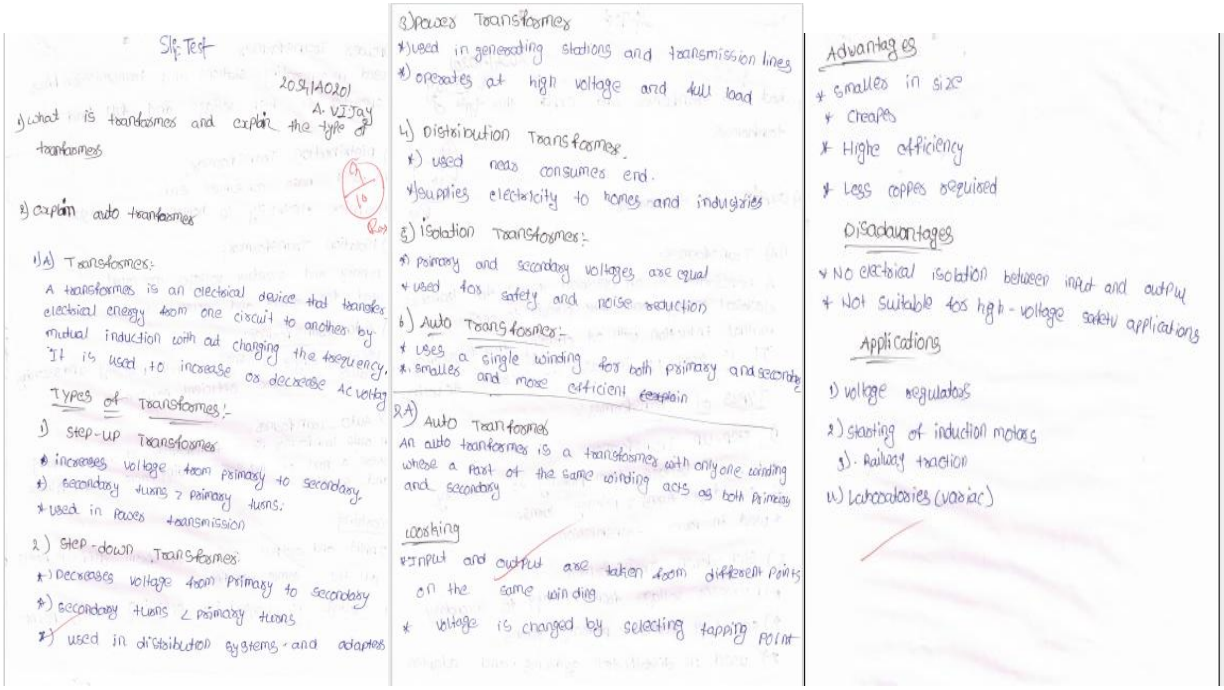
Outcomes:

- Improved understanding of speed control methods and drive system behavior.
- Enhanced critical thinking and analytical skills through interactive discussions.
- Increased student engagement and participation in problem-solving activities.
- Developed ability to relate theory to practical drive applications.

3. SLIP TEST

Faculty: K. Ramesh
Course: BEEE (Basic Electrical and Electronics Engineering)
Topic Covered: Electrical Circuit Theorems
Class: II-II
Academic year: 2024-25

Mr K. Ramesh implemented an **exercise-based and problem-solving approach** for B.Tech II–II students covering electrical circuit theorems. The teaching methodology emphasized step-by-step problem solving, interactive discussions, and application of theorems in practical circuit analysis. Students were actively involved in solving numerical problems and analyzing circuit behavior, which helped strengthen their theoretical understanding and practical application skills.


Slip Test

2054/A0201 A. Vijay

1) what is transformer and explain the type of transformer

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2) explain auto transformer

1) A) Transformer:
A transformer is an electrical device that transfer electrical energy from one circuit to another by mutual induction with out changing the frequency. It is used to increase or decrease AC voltage

Types of Transformers:
1) Step-up Transformer
* increases voltage from primary to secondary
* secondary turns > primary turns.
* used in power transmission
2) Step-down Transformer
* Decreases voltage from primary to secondary
* secondary turns < primary turns
* used in distribution systems, and adapters

3) Power Transformer
* used in generating stations and transmission lines
* operates at high voltage and full load
4) Distribution Transformer
* used near consumer end.
* supplies electricity to homes and industries
5) Isolation Transformer:
* primary and secondary voltages are equal
* used for safety and noise reduction
6) Auto Transformer:
* uses a single winding for both primary and secondary
* smaller and more efficient explain

2.A) Auto Transformer
An auto transformer is a transformer with only one winding where a part of the same winding acts as both primary and secondary

Working
* Input and output are taken from different points on the same winding
* voltage is changed by selecting tapping point

Advantages
* smaller in size
* cheaper
* Higher efficiency
* Less copper required

Disadvantages
* No electrical isolation between input and output
* Not suitable for high-voltage safety applications

Applications
1) voltage regulators
2) starting of induction motors
3) Railway traction
4) Laboratories (variac)

Outcomes:

- Improved conceptual understanding of key circuit theorems.
- Enhanced problem-solving skills through hands-on exercises and guided practice.
- Increased engagement and collaborative learning in classroom discussions.
- Strengthened ability to apply theoretical knowledge to practical circuit scenarios.