

Delhi Public School Ghaziabad

Class XII

PHYSICS

Lesson plan

based on DOL

UNIT 4 -ELECTRO MAGNETIC INDUCTION AND ALTERNATING CURRENT

Unit	UNIT 4 CH 6; ELECTRO MAGNETIC INDUCTION CH 7 ; ALTERNATING CURRENT
Class Transaction	Total: 20 periods
Pre-requisite for the course	This lesson requires: • Basic knowledge of electromagnetic induction
Assessment of qualifying knowledge	• Written test • Lab activity
Objective	To provide students with knowledge of Enhance ability to accurately recognize and use appropriate terminology related to electromagnetic induction and alternating current
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand</i> <i>Modes Critical Thinking</i> <i>Creative</i> <u>SKILLS</u>- <i>Students would be able to</i> Understand and differentiate between ac and dc current.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Transaction would proceed in the following manner- Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying. Introduction of the topic- ppt and Digital Content would be shared Guided practice followed by Independent Practice- NCERT questions to be discussed in the classroom. Techniques to be used: Student - teacher interaction, collaborative learning, independent research, differentiated teaching, peer learning Competencies: collaborative learning, critical thinking and problem solving,
Resources	NCERT text book, Reference Book, CBSE Exemplar, DPSG Spiral www.learncbse.in/cbse-notes/ https://mycbseguide.com www.examfear.com
Self- Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their spirals. It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Assessments	UNIT TESTS , MID TERM EXAMINATION, HALF YEARLY

	EXAMINATION, PRE BOARD EXAMINATION
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For high scoring students:</i> Encouragement for referring other resources <i>For low scoring students:</i> Peer education Provide grade-up classes <i>For differently abled students:</i> Call parents at regular intervals Provide PCC classes Encourage and motivate them at every level.
Marks	Reproduction Unit – 14 marks , Chapter – 2 marks

CLASS XII LESSON PLAN
Unit 4- ELECTRO MAGNETIC INDUCTION AND ALTERNATING CURRENT
(Based on DOL)

Anticipatory Set: Facilitator introduces the topic **ELECTRO MAGNETIC INDUCTION AND ALTERNATING CURRENT**

Objective:

- Given questions based on the topic. Learners will be able to revise the basic principle of geography.
- To make students able to solve questions based on the topics to be discussed
- They will be able to track the growth of subject.

Techniques to be used:

- Peer Assessment
- Quiz

Materials required and Teaching Aids: blackboard, chalk, duster, Text book

Strategy

Student – teacher interaction, collaborative learning, independent practice

DAY 1

- Electromagnetic induction, Faraday’s laws and Lenz’s law
- Motional emf

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked about emi (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching

- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 2

- Electromagnetic induction, Faraday's laws and Lenz's law
- Motional emf

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked about emi (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 3

- Induced emf and current
- Eddy current and its applications

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked about application of eddy current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 4

- Induced emf and current
- Eddy current and its applications

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked about application of eddy current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 5

- Self induction principle
- Self induction in long solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked inertia of current(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 6

- Self induction principle
- Self induction in long solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked inertia of current(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 7

- Mutual induction principle
- Mutual induction in long coaxial solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked uses of induction (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 8

- Mutual induction principle
- Mutual induction in long coaxial solenoid

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of induction (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 9

- Alternating current and voltage
- Mean and rms value

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked effective alternating current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 10

- Alternating current and voltage
- Mean and rms value

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked effective alternating current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 11

- Ac circuits pure resistor, inductor
- Ac circuits pure capacitor

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked phase diagram of different circuit(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 12

- Ac circuits pure resistor, inductor
- Ac circuits pure capacitor

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
Students will be asked phase diagram of different circuit(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 13

- Series LCR circuit
- Resonance of Series LCR circuit

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of resonance of LCR (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

- a. Students will be asked to revise the work done in class.
- b. Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 14

- Series LCR circuit
- Resonance of Series LCR circuit

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher
- Students will be asked uses of resonance of LCR (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 15

- Power consumption on series LCR circuit
- Sharpness of resonant curve and quality factor
- L-C oscillations

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked wattles current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 16

- Power consumption on series LCR circuit
- Sharpness of resonant curve and quality factor
- L-C oscillations

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked wattles current (Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 17

- AC generator
- Transformer
- Energy losses and uses of transformer to power supply

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked types of transformer(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 18

- AC generator
- Transformer
- Energy losses and uses of transformer to power supply

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked types of transformer(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 19

- AC generator
- Transformer
- Energy losses and uses of transformer to power supply

Guided practice:

- Students will solve selected questions from NCERT book of exercise in their note book in the class with the help of their teacher

Students will be asked types of transformer(Problem solving)

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

Students will be asked to revise the work done in class.

Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping

DAY 20

- To find the frequency of ac mains using sonometer

Guided practice:

- Students will take observation for the experiment.
Students will be asked to write experiment in record file.

SUMMARIZE AND CHECK FOR UNDERSTANDING

- Oral questioning based on days teaching
- Discussion on the topic

Communication:

Independent practice:

- c. Students will be asked to revise the work done in class.
- d. Students will be asked to do question in assignment copy from the given assignment.

Critical thinking:

Help students develop reasoned problem solving and decision making skills

Closure of the lesson

Summarizing the lesson by mind mapping