Magnetism & Electromagnetism

Spoken Tutorial Project
https://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

Himanshi Karwanje
IIT Bombay

26 June 2020

Learning Objectives

Learning Objectives

- **Draw magnetic field lines for a bar magnet**

Learning Objectives

- **Draw magnetic field lines for a bar magnet**
- **Verify right hand thumb rule**

Learning Objectives

- **Draw magnetic field lines for a bar magnet**
- **Verify right hand thumb rule**
- **Verify Fleming's left hand and right hand rules**

Learning Objectives

- **Draw magnetic field lines for a bar magnet**
- **Verify right hand thumb rule**
- **Verify Fleming's left hand and right hand rules**
- **Simulate the working of a generator**

System Requirements

System Requirements

- **Ubuntu Linux OS v 16.04**

System Requirements

- **Ubuntu Linux OS v 16.04**
- **Firefox Web Browser v 62.0.3**

Pre-requisities

Pre-requisities

- **Learner should be familiar with Apps on Physics**

Pre-requisities

- Learner should be familiar with Apps on Physics
- For pre-requisities tutorials please visit this site https://spoken-tutorial.org

Apps on Physics

Apps on Physics

- **Magnetic Field of a Bar Magnet**

Apps on Physics

- **Magnetic Field of a Bar Magnet**
- **Magnetic Field of a Straight Current-Carrying Wire**

Apps on Physics

- **Magnetic Field of a Bar Magnet**
- **Magnetic Field of a Straight Current-Carrying Wire**
- **Lorentz Force**

Apps on Physics

- **Magnetic Field of a Bar Magnet**
- **Magnetic Field of a Straight Current-Carrying Wire**
- **Lorentz Force**
- **Generator**

Assignment

Assignment

- **Reverse the current flow and determine the magnetic field**

Assignment

Assignment

- **Reverse the current flow**

Assignment

- **Reverse the current flow**
- **Determine the direction of lorentz force using Flemings left hand rule**

Assignment

Assignment

- **Change the rotations per minute to 0, 3.0, 6.0 and 9.0**

Assignment

- **Change the rotations per minute to 0, 3.0, 6.0 and 9.0**
- **Note the changes in the movement of the coil and graph**

Assignment

- **Change the rotations per minute to 0, 3.0, 6.0 and 9.0**
- **Note the changes in the movement of the coil and graph**
- **Explain the reason for the changes**

Summary

Summary

- Drawn magnetic field lines of a bar magnet
- Verified right hand thumb rule
- Verified Fleming's left hand and right hand rules
- Simulated the working of a generator

Acknowledgement

- **These Apps were created by Walter-fendt and his team**

About the Spoken Tutorial Project

- **Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial**
- **It summarises the Spoken Tutorial project**

About the Spoken Tutorial Project

- Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it

Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- **Conducts workshops using spoken tutorials**
- **Gives certificates to those who pass an online test**
- **For more details, please write to contact@spoken-tutorial.org**

Forum for specific questions

- Questions in THIS Spoken Tutorial?
- Visit https://forums.spoken-tutorial.org
- Choose the minute and second where you have the question
- Explain your question briefly
- The Spoken Tutorial project will ensure an answer

You will have to register to ask questions

Acknowledgement

Spoken Tutorial project is supported by

- **National Mission on Education through ICT (NMEICT)**
- **Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)**

MHRD, Government of India