A collaborative LaTeX document

Class of ID2090, Third Trimester of 2021 batch

June 14, 2022

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1 Introduction

This file includes tex files from the folders of each student. The students are expected to update the file named after their roll number and place any images in the same folder. Students do not have to edit this master document. Once the student has sent a pull request which is accepted and processed successfully, his/her assignment submission is deemed to be complete.

You are also welcome to add references and cite them. Examples on how to do that are on the course repository [**?**].

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19 ME21B050

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22 ME21B079

22.1 Maxwell Equation

Faraday's law

$$\frac{\partial \mathcal{D}}{\partial t} = \nabla \times \mathcal{H}$$

Ampère's Law

$$\frac{\partial \mathcal{B}}{\partial t} = -\nabla \times \mathcal{E}$$

Gauss Law

$$\nabla \cdot \mathcal{B} = 0,$$

Colomb's Law

$$\nabla \cdot \mathcal{D} = \rho_v$$

22.2 Faraday's Law

When the magnetic flux linking a circuit changes, an electromotive force is induced in the circuit proportional to the rate of change of the flux linkage.

22.3 Ampère's Law

The magnetic field created by an electric current is proportional to the size of that electric current with a constant of proportionality equal to the permeability of free space

22.4 Gauss Law

Gauss's law for magnetism states that the magnetic flux B across any closed surface is zero

22.5 Colomb's Law

The closed line integral of magnetic field vector is always equal to the total amount of scalar electric field enclosed within the path of any shape

22.6 Expansion of variables

'Symbol'	'Expansion'
D	The volume of electric charge density
B	The magnetic field
E	The electric field
H	Magnetic field strength
ρ	Free Charge Density

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44 Conclusions

If this master tex file could be compiled successfully, it means that the class has learnt the concepts of Git as well as LaTeX properly.

45 References

References

[1] Repository for id2090 course. `https://github.com/gphanikumar/mm2090`. Accessed: 2022-06-13.