PADRE CONCEIÇÃO COLLEGE OF ENGINEERING

Verna - Goa

Department of Basic Science and Humanities

Roll No:							

Re-Internal Test-I

Semester & Course: I (RC 2019-20) **Date:**8/2/2022
Subject: FE 120 Physics **Time:**10am-12pm
Course Instructor: Swapna Narvekar **Max Marks:** 25

Instructions: Attempt all questions. Assume missing data, if any and justify.

		Marks	CO	CL
Q1.	**Explain** interference in a parallel thin film for reflected light and derive the conditions for maxima and minima; with a neat ray diagram**.**	**[5]**	**FE120.1**	**CL2**
Q2.	**Find** Diffusion coefficients of electrons and holes of a semiconductor at **28 ^{o}C**,if mobilities of electrons and holes are **0.19** and **0.027 m^2/Vs** respectively.	**[5]**	**FE120.2**	**CL3**
Q3.	**Derive** an expression for conductivity of a semiconductor in terms of a mobility of charge carriers**.**	**[5]**	**FE120.2**	**CL2**
Q4.	**The** area of a hysteresis loop drawn between B and H is **220m^2**. Each unit space along the vertical axis represent **0.02 Wb/m^2** and each unit space along the horizontal axis represents **30A/m**. **Determine** the hysteresis loss per cycle.	**[4]**	**FE120.2**	**CL3**
Q5.	**Distinguish** between soft magnetic materials and hard magnetic materials. Draw diagrams of B-H curve for each.	**[6]**	**FE120.2**	**CL2**

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