

ACADEMIC SESSION : 2023-24(Winter)

Discipline : ELECTRICAL ENGINEERING	Semester : 3RD	Name of the Teaching Faculty : KIRAN KUMAR BHOI
Subject : ELECTRICAL ENGINEERING MATERIAL	No. of days / week class allotted	Semester From date: 01/08/2023 to 30/11/2023 Nos. of Weeks per semester : 15
Week	Class Day	Theory/ Practical Topics
1 ST	1 ST	Conducting Materials-Introduction
	2 ND	Resistivity, factors affecting resistivity
	3 RD	Classification of conducting materials into low-resistivity and high resistivity materials
	4 TH	Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
2 ND	1 ST	Stranded conductors
	2 ND	Bundled conductors
	3 RD	Low resistivity copper alloys
	4 TH	High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
3 RD	1 ST	Superconductivity
	2 ND	Superconducting materials
	3 RD	Application of superconductor materials
	4 TH	Semiconducting Materials- Introduction
4 TH	1 ST	Semiconductors
	2 ND	Electron Energy and Energy Band Theory
	3 RD	Excitation of Atoms
	4 TH	Insulators, Semiconductors and Conductors
5 TH	1 ST	Semiconductor Materials
	2 ND	Covalent Bonds
	3 RD	Intrinsic Semiconductors

		Extrinsic Semiconductors
	4 th	N-Type Materials
6 TH	1 st	P-Type Materials
	2 nd	Minority and Majority Carriers
	3 rd	Semi-Conductor Materials
	4 th	Applications of Semiconductor materials, Rectifiers, Temperature-sensitive resistors or thermistors
7 TH	1 st	Varistors, Transistors, Hall effect generators, Solar power
	2 nd	Insulating Materials- Introduction
	3 rd	General properties of Insulating Materials, Electrical properties, Visual properties
	4 th	Mechanical properties, Thermal properties, Chemical properties, Ageing
8 TH	1 st	Classification of insulating materials on the basis physical and chemical structure
	2 nd	Insulating Gases, Introduction, Commonly used insulating gases
	3 rd	Dielectric Materials- Introduction
	4 th	Dielectric Constant of Permittivity
9 TH	1 st	Polarization
	2 nd	Dielectric Loss
	3 rd	Electric Conductivity of Dielectrics and their Break Down
	4 th	Properties of Dielectrics.
10 TH	1 st	Applications of Dielectrics.
	2 nd	Magnetic Materials-Introduction
	3 rd	Classification Magnetic Materials
	4 th	Diamagnetism
11 TH	1 st	Para magnetism 5.2.3 Ferromagnetism
	2 nd	Magnetization Curve
	3 rd	Hysteresis
	4 th	Eddy Currents

12 th	1 st	Curie Point
	2 nd	Magneto-striction
	3 rd	Soft magnetic materials
	4 th	Hard magnetic materials
13 th	1 st	Materials for Special Purposes- Introduction
	2 nd	Structural Materials
	3 rd	Protective Materials
	4 th	Protective Materials- Lead
14 th	1 st	Steel tapes, wires and strips
	2 nd	Other Materials
	3 rd	Thermocouple materials
	4 th	Bimetals
15 th	1 st	Soldering Materials
	2 nd	Fuse and Fuse materials.
	3 rd	Dehydrating material.
	4 th	Question discussion

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28.7.23

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