GOVERNMENT POLYTECHNIC, BARGARH

Department Of Electrical Engineering

Semester: 3RD. DIPLOMA — Session: (WINTER)

Subject: Electrical Engineering Material — No of Period :60 (4p/week)

Branch: Electrical Engineering — Name of Faculty: NITESH KU. ACHARYA

Week	Period	Topics to be covered
1st Week	1	Introduction Resistivity, factors affecting resistivity
	2	Classification of conducting materials into low-resistivity and high resistivity materials
	3	Low Resistivity Materials and their Applications (Copper, Silver)
	4	Low Resistivity Materials and their Applications (Gold, Aluminium, Steel)
2nd Week	5	Stranded conductors
	6	Bundled conductors
	7	Low resistivity copper alloys
	8	High Resistivity Materials and their Applications (Tungsten, Carbon)
3rd Week	9	High Resistivity Materials and their Applications (Platinum, Mercury)
	10	Superconductivity
	11	Superconducting materials
	12	Application of superconductor materials
4th Week	13	Introduction, Semiconductors, Electron Energy and Energy Band Theory
	14	Excitation of Atoms, Insulators, Semiconductors and Conductors, Semiconductor Materials
	15	Covalent Bonds, Intrinsic Semiconductors
	16	Extrinsic Semiconductors
5th Week	17	N-Type Materials
	18	P-Type Materials
	19	Minority and Majority Carriers, Semi-Conductor Materials
	20	Applications of Semiconductor materials (Rectifiers, Temperature-sensitive resisters or thermistors, Photoconductive cells)
6th Week	21	Applications of Semiconductor materials (Photovoltaic cells, Varisters , Transistors)
	22	Applications of Semiconductor materials (Hall effect generators, Solar power)
	23	Introduction, General properties of Insulating Materials, Electrical properties, Visual properties
	24	Mechanical properties, Thermal properties, Chemical properties, Ageing
7th Week	25	Insulating Materials – Classification, properties, applications
	26	Classification of insulating materials on the basis physical and chemical structure
	27	Insulating Gases

	28	Commonly used insulating gases
8th Week	29	Introduction, Dielectric Constant of Permittivity
	30	Polarisation
	31	Dielectric Loss
	32	Electric Conductivity of Dielectrics and their Break Down
9th Week	33	Properties of Dielectrics
	34	Applications of Dielectrics
	35	Introduction, Classification (Diamagnetism)
	36	Para magnetism
10th Week	37	Ferromagnetism
	38	Magnetization Curve
	39	Hysteresis
	40	Eddy Currents
11th Week	41	Curie Point
	42	Magneto-striction
	43	Soft magnetic Materials
	44	Hard magnetic Materials
12th Week	45	Introduction, Structural Materials
	46	Protective Materials Lead, Steel tapes
	47	wires and strips
	48	Thermocouple materials
13th Week	49	Bimetals
	50	Soldering Materials
	51	Fuse and Fuse materials
	52	Dehydrating material
14th Week	53	Previous Question Discussion
	54	Previous Question Discussion
	55	Previous Question Discussion
	56	Previous Question Discussion
15th week	57	Previous Question Discussion
	58	Previous Question Discussion
	59	Previous Question Discussion
	60	Previous Question Discussion