Quantum University

Quantum School of Technology

Course / Topic wise Schedule of Teaching

Name of The Faculty :

Name of The Programme : **Diploma**

Name of The Paper : **Basics of Electrical and Electronics Engineering**

Year / Sem : **3**

Paper Code : **EE1306**

Session : **2022-23**

Section :

Unit	Topic	No. Lecture taken	Teaching Methodology	CO / Bloom	Start Date	Complete Date	Reading References
unit 1	General use and applications of electricity	0	N/A	CO1 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Use and applications of electricity to agriculture, Mechanical & Automobile sector	0	N/A	CO1 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Advantages of electrical energy over other forms of energy	0	N/A	CO1 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	DC Circuits: Introduction to basic terms: charge, current, voltage, power, and energy	0	N/A	CO1 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Ohm’s law; Kirchhoff’s laws	0	N/A	CO1 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Star-delta conversions	0	N/A	CO1 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
unit 2	AC Circuits: Concept of alternating voltage and current; Introduction to basic terms: cycle,	0	N/A	CO2 / UN			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	frequency, time period, amplitude, instantaneous value, RMS value, peak value, phase difference, form factor, and peak factor	0	N/A	CO2 / UN			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Phasor diagrams; Concepts of reactance, impedance, admittance, susceptance, and conductance;	0	N/A	CO2 / UN			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Concepts of instantaneous power, real power, reactive power, apparent power, complex power, and power factor	0	N/A	CO2 / UN			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.

unit 2	Batteries and Solar Cells: Primary and secondary cells; Construction, working, and applications of Lead-Acid	0	N/A	CO2 / UN			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Charging methods for Lead-Acid batteries; Maintenance of Lead-Acid batteries	0	N/A	CO2 / UN			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Series and parallel connection of batteries	0	N/A	CO2 / UN			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Maintenance free batteries; General idea of solar cells, solar panels and their applications	0	N/A	CO2 / UN			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Semiconductor materials and properties	0	N/A	CO2 / UN			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Covalent bond, electron-hole concepts	0	N/A	CO2 / UN			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
unit 3	Concepts of forbidden gap Intrinsic and extrinsic semiconductors	0	N/A	CO3 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Donors and acceptors impurities.	0	N/A	CO3 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	P-N junction, Depletion layer	0	N/A	CO3 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	V-I characteristic; Diode resistance; Capacitance diode ratings.	0	N/A	CO3 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Rectifiers (half wave and full wave)	0	N/A	CO3 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Calculation of transformer utilization factor and diode ratings	0	N/A	CO3 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Ripple factor and load regulation clipping circuits	0	N/A	CO3 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	clamping circuits, voltage multipliers	0	N/A	CO3 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
unit 4	Breakdown mechanisms (zener and avalanche);	0	N/A	CO4 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.

unit 4	Breakdown characteristics; Zener resistance	0	N/A	CO4 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Zener diode ratings	0	N/A	CO4 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Zener diode application as shunt regulator.	0	N/A	CO4 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Basic construction; Transistor action	0	N/A	CO4 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	CB, CE and CC configurations	0	N/A	CO4 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
unit 5	input/output Characteristics	0	N/A	CO5 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Concept of Biasing of transistors-fixed bias	0	N/A	CO5 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.
	Emitter bias	0	N/A	CO5 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Potential divider bias	0	N/A	CO5 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Introduction to JFET	0	N/A	CO5 / AP			BR Sharma ,Basic Electricity, SatyaPrakashan, NewDelhi
	Introduction to MOSFET.	0	N/A	CO5 / AP			PS Dhongal, Basic Electrical Engineering, Tata McGraw Hill Publishers,New Delhi.