



HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B. Sc. PHYSICS - SEMESTER – II

TYPE OF COURSE: SKILL ENHANCEMENT COURSE

PROGRAMME CODE: SCIUG101 COURSE CODE:SC23SECPHY206

COURSE NAME: Electronic Circuit Elements and Energy Sources

(Effective from June 2023 Under NEP – 2020)

Total Credits: 02	Theory	External Marks – 25
Teaching Hours per Week: 02		Internal Marks – 25
Teaching Hours per Semester:30		

Unit No.	Content	Credit	Lect Hrs 30
Unit-1	RESISTOR: Generals (6.1), Resistor type, Wire wound resistor, Carbon composition resistor, Carbon film resistor, Cermet film resistor, Metal film resistor, Power resistor, Value tolerance, Variable resistor, Potentiometer and Rheostats, Fusible resistor., Resistor color, resistor, Color band, Resistor under ten ohm, Resistor. Troubles, Checking resistor with ohmmeter. CAPACITOR: Capacitors, Capacitor connect to battery, Capacitance, Factors controlling capacitance, Type of Capacitors, Fixed Capacitor, Variable capacitors, Voltage rating of capacitors, Stray circuit cap. Leakage resistance, Troubles Capacitor, Checking capacitor with ohm meter. INDUCTOR: Inductor, Comparison of different coils, Inductance of an inductance, Another definition of inductance, Mutual inductance, Coefficient of coupling, Variables inductors, Inductor in series and parallel without M, Series combination with m, Stray inductance, Energy storage magnetic field, DC Resistance of coils.	1	15
Unit-2	CELLS AND BATTERY: Primary and Secondary cells and Battery's, Voltage and current of cell, Cell life, Different type of dry cells, Carbon zinc cell, Alkaline cell, Manganese alkaline cell, Nickel cadmium cell, Mercury cell, Silver oxide cell, Lead acid cell, Battery rating, Testing dry cell, Photo electric cell, Solar cell TRANSFORMER: Introduction, Type of Transformer, Construction of Transformer, Transformer working, Transformer impedance, Can a Transformer Operate on DC RF Shielding, Auto Transformer	1	15
Basic Reference: <i>Basic Electronics by B. L. Theraja, Pub. S. Chand & Company 3rd Edition</i>			

P. P. S.

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