3rd sem

EEL201 NETWORK THEORY (**3-0-0-6**)
Contents
Node and Mesh Analysis: Node and mesh equation, matrix approach of complicated network containing voltage
and current sources, and reactances, source transformation and duality.
Network theorem: Superposition, reciprocity, Thevenin's, Nortons, Maximum power Transfer, compensation and
Tallegen's theorem as applied to AC. circuits.
Trigonometric and exponential Fourier series: Discrete spectra and symmetry of waveform, steady state response of
a network to non-sinusoidal periodic inputs, power factor , effective values, Fourier transform and continuous
spectra, three phase unbalance circuit and power calculation.
Laplace transforms and properties: Partial fraction, singularity functions, waveform synthesis, analysis of RC, RL,
and RLC networks with and without initial conditions with laplace transforms evaluation of initial conditions.
Trasient behaviour, concept of complex frequency, Driving points and transfer functions poles and zeros of
immittance function, their properties, sinusoidal response from pole-zero locations, convolution theorem and
integral solutions.
Reference Books
1. Van, valkenburg.; Network analysis ; Prentice hall of India, 2000
2. Sudhakar, A.,Shyammohan, S. P.; Circuits and Network ; Tata Mcgraw-Hill ; NewDelhi1994.

EEL206 ELEMENTS OF ELECTROMAGNETICS (3-0-0-6)
Contents
Vector algebra ,Cartesian, Cylindrical and Spherical co-ordinate system. Transformation of variables from
Cartesian to cylindrical and spherical coordinate system and vice-versa.
Coulomb's law, Electric field intensity, Field of 'n' point charges, Field of line and sheet of charge. Electric flux
density, Gauss's law and it's applications. Divergence and Divergence theorem.
Definition of potential difference and potential, Potential of point charge and system of charges. Potential gradient,
Energy density in electrostatic field. Poisson's and Laplace's equations. Current and current density, Continuity of
current. Capacitance.
Biot-Savart and Amperes circuital laws and their applications ,Curl, Stoke's theorem. Magnetic flux density, Scalar
and Vector magnetic potential. Maxwell's equations in steady electric and magnetic fields.
Force on moving charge and differential current element, Force and torque on a closed circuit. Time varying fields
and Maxwell's equations.
Uniform plane waves, wave motion in free space, perfect dielectric, lossy dielectric and good conductor, skin effect
.Poynting vector and power considerations. Reflection of uniform plane waves, Standing ratio.
Reference Books
1. Hayt, W.H.; Engineering Electromagnetics; Sixth Edition; Tata McGraw Hil;2002

2. Narayan Rao; Engineering Electromagnetics; Prentice Hall of India;2002
3. Mathew, N.O., Sadiku ; Elements of Electromagnetics ; Third Edition ; Oxford University Press 2003

Course Code & Title: - CSL207 : Web Technology (OC)

(L-T-P-C: 3-0-0-6)

Pre-requisite:

History of the Internet and World Wide Web – HTML 4 protocols – HTTP, SMTP, POP3, MIME, IMAP. Introduction to JAVA Scripts – Object Based Scripting for the web. Structures – Functions--Arrays–Objects.

Introduction – Object refers, Collectors all and Children. Dynamic style, Dynamic position, frames, navigator, Event Model – On check – On load – Onenor – Mouse rel – Form process – Event Bubblers – Filters – Transport with the Filter – Creating Images – Adding shadows – Creating Gradients – Creating Motion with Blur – Data Binding – Simple Data Binding – Moving with a record set – Sorting table data – Binding of an Image and table. Audio and video speech synthesis and recognition - Electronic Commerce – E-Business Model – E-Marketing – Online Payments and Security – Web Servers – HTTP request types – System Architecture – Client Side Scripting and Server side Scripting – Accessing Web servers – IIS – Apache web server. Database, Relational Database model – Overview, SQL – ASP – Working of ASP – Objects – File System Objects – Session tracking and cookies – ADO – Access a Database from ASP – Server side Active-X Components – Web Resources – XML – Structure in Data – Name spaces – DTD – Vocabularies – DOM methods.

Introduction – Servlet Overview Architecture – Handling HTTP Request – Get and post request – redirecting request – multi-tier applications – JSP – Overview – Objects – scripting – Standard Actions – Directives.

Text / References :

Internet and world wide web – How to Program : Deitel & Deitel, Goldberg , Pearson Education Asia, 2001.

1. Using HTML 4, XML and JAVA : Eric Ladd, Jim O' Donnel , Prentice Hall of India – QUE , 1999
2. Web Programming: Desktop Management : Aferganatel, PHI, 2004
3. Web Technology: Rajkama , Tata McGraw-Hill, 2001

EEL367 INSTRUMENTATION (3-0-0-6)
Contents
Generalized instrumentation system, Classification of transducer, Digital and analogues mode of operation, Static

and dynamic characteristics, Performance of instruments, Statically treatment of measurement error, Gaussian
probability tables, Combination of errors.
Motion measurement: Relative and absolute motion measurement, Electrical transducer for motion measurement,
LVDT, Piezoelectric transducers, Variable inductive and variable capacitive transducers.
Measurement of Velocity, Acceleration, Shaft torque and power.
Temperature measurement: Laws of thermo-electric circuits, Thermocouples, Cold junction compensation,
Thermistor, Radiation thermometer, Broad band and narrow band methods, Two color pyrometers, Optical
pyrometer, Temperature compensation of temperature sensors, heat flux sensors.
Miscellaneous measurements: Brief treatment of principle and methods used in the measurement of liquid level,
Flow, Pressure, Low pressure and pH.
Cathode Ray Oscilloscopes, Introduction to data acquisition systems
Methods of analog to digital conversion, Errors in analog to digital conversion, methods of digital to analog
conversion, Application of digital voltmeters, Frequency measurements.
Integrated circuits in instrumentation: Timer (555), function generators (2206): Constant current source, Elementary
idea of microprocessor based instrumentation.
Note: Stress should be on electrical and electronic methods.

Reference Books

1. Rangan, Sarma ;Instrumentation.: Devices and Systems; Tata McGraw Hill Publication.
2. Doeblin ; Measurement Systems ; Tata McGraw Hill Publication.
3. Sawhaney A.K.; A Course in Electrical and Electronics Measurements and Instrumentation; (Eleventh Edition)
Dhanpat Rai & Sons, Delhi 1994.
4. Golding E.W., Widdis F. C.; Electrical Measurements and Measuring Instruments; Wheeler's Student Edition,
(Third Edition), 1994.
5. Cooper W.D., Helfrick A.D.; Electronic Measurements and Instrumentation (Third Edition) ; Prentice-Hall of
India, New Delhi 1991.
6. Gayakwad Ramakant.; OP-AMPS and Linear Integrated Circuits (Third Edition); Prentice-Hall of India Private
Ltd.

ECL255 ELECTRONIC DEVICES & CIRCUITS (EDC) (3-0-0-6)
Contents
Semiconductor physics, P & N type semiconductors, Diodes and Power Supplies
Theory of P-N junction diode, Junction capacitance, Characteristics & applications of following diodes, Zener ,
Schottkey , Photodiode, LED's, LCD, Varacter diode & Tunnel diode.
Power supplies, Halfwave & Fullwave , Rectifiers, Filters, ripple-factor, Zener & Emitter follower type regulators.
Junction Transistors
Theory of operation, Static characteristics , Break down voltages, Current voltage power limitations, Biasing
of BJT different biasing arrangements, Stability factor, Thermal runaway, Power transistors.
Small Signal Analysis & High frequency analysis of BJT.

CE, CB, CC amplifiers and Comparison,. High frequency analysis calculation of frequency response, gain bandwidth product.
Power Amplifiers
Classification A,B, AB, C classes, efficiency, Push Pull configuration. Complimentary symmetry, Second harmonic & cross over distortion.
Positive And Negative Feedback Amplifiers
Feedback amplifiers, Classification, Practical Circuits, Applications , Advantages.
Oscillators, Stability, Barkhausen criteria RC, LC & Crystal Oscillators.
Field Effect Transistors
Field effect transistor & MOSFET, Principle of operation & characteristic, biasing
Arrangement. Small Signal analysis of CG, CD & CS, High frequency analysis.
Reference Books
1. Milman and Halkias ; Integrated Electronics ; McGraw Hill.
2. Boylestad and Nashelsky ; Electronic Devices & Circuit theory.; PHI
3. Schilling & Belove : Electronic Circuits - Discrete and Integrated; McGraw Hill.
4. Bapat ; Theory & problem in Ckt. analysis ; McGraw Hill
5. Carr ; Electronic Devices; Tata McGraw Hill
6. Nagrath, I.J; Electronics - Analog and Digital; PHI

MAL251MATHEMATICS – III (3-0-0-6)
Contents
Definition of Laplace Transforms and its properties, Laplace Transform of derivatives and integrals, evaluation of
integrals by Laplace Transforms, Inverse Laplace Transforms, convolution theorem, Laplace Transforms of periodic
functions, unit step function and dirac delta function, Applications of Laplace Transform to solve ordinary differential equations and partial differential equations – one dimensional wave and diffusion equations.
Partial differential equation of first degree i.e. Lagrange's form, linear, homogeneous partial differential of n_{th} order
with constant coefficient, method of separation of variables, applications to transmission lines.
Ordinary differential Equation of higher order, Solution of ordinary differential equations of higher order,Frobenius
method.Bessel's and Legendre's, equation and some applications.
Introduction to Functionals, Maxima & Minima of functionals, variation and its properties, Euler's equation, functionals dependent on first and second order derivatives, simple applications.
Numeric methods for Solution of linear, linear algebraic and transcendental equations, method a false position,
Newton-Raphson method, system of linear equations, Gauss elimination method, Gauss Seidel method, Crout's
method.
Numerical solution of ordinary differential equations by Taylor's series method, Euler's and Modified Euler method, Predictor corrector method, Runge Kutta method, solution of simultaneous differential equations.
Reference Books
1. Kreyszig, E. ; Advanced Engineering Mathematics(Eighth Edition) ; John Wiley & Sons ; 2000.
2. Grewal, B.S ; Higher Engineering mathematics(Thirty eighth Edition) ;Khanna Publishers ; 2004.
3. Grewal, B.S ;Numerical Methods in Engineering and Science(Sixth Edition) ; Khanna Publishers; 2002.
4. Sastry, S.S ; Introductory methods of Numerical Analysis (Third Edition) ; Prentice Hall of India ; 1998.

EEP201 NETWORK THEORY, (0-0-2-2)
Practicals based on the syllabus prescribed.

EEP204 MEASUREMENT AND INSTRUMENTATION (0-0-2-2)
Practical
1. Measurement of unknown inductance by Maxwell L C Bridge.
2. Measurement of unknown Capacitance by De Sauty's Bridge.
3. Study of low resistance by Kelvin Double Bridge.
4. Testing and Calibration of 1 phase Energy meter by Phantom Loading.
5. Study of LVDT Transducer.
6. Study of Instrumentation Amplifier.
7. Study of Analog to Digital converter.
8. Study of Digital to Analog Converter

ECP255 ELECTRONIC DEVICES & CIRCUITS (0-0-2-2)
Practical
Practicals based on the syllabus prescribed.

5th sem

EEL301 ELECTRICAL POWER SYSTEM-I (3-0-0-6)
Contents
General structure of Electrical Power System, single line diagram representation. Brief idea of types of generation
using fossil fuels, hydro, nuclear and non-conventional sources.
Idea about substation and equipments in substation. Concept of instantaneous, real, reactive and complex power,
three phase power and power loss.
Basic concept of inductance and capacitance of transmission lines. Per unit system and single line diagram
representation.
Voltage behind reactance model of generator and power angle characteristics. Models of short, medium, long
transmission lines. A, B, C, D parameters.
Transmission line voltage control methods. Introduction to load flow analysis, Y bus formation, Newton-Raphson
method for solution of load flow problem (not more than 3 buses).
Load frequency control, model of turbine speed governing system, load sharing by generators, concept of control
area, two area load frequency control.
Model of automatic voltage controller.Types of overhead line insulators, string efficiency. Fast, medium and slow
overvoltages in power
Reference Books
1. Stevenson W.D. Jr., Elements of power system analysis 3rd Edition, Mc- GrawHill publications 1974.
2. Nagrath I. J., Kothari D. P. ; Power System Engineering ; Tata – Mc- GrawHill publications 1989.
3. Elgerd O. I. ; Electric Energy Systems Theory ; Mc- GrawHill publications 1971.TMH publications.
4. Grainger John J., Stevenson W.D. Jr.; Power System Analysis; Mc- GrawHill international editions.
5. Sadat Hadi ; Power System Analysis ; Mc- GrawHill international

ECL321 MICROPROCESSORS & INTERFACING (3-0-0-6)
Contents

VSLI circuit concept, approach to integrated system design using microprocessors. Bus concepts. Address data and
control. Organisation of a computer with MPU.

Bits/bytes/words/long words – their ranges – accuracy and precision. Memory organisation. Linear/absolute
decoding.

Introduction to Intel's 8085A Architecture, description, software instructions, addressing modes, advantages, timing
diagram assess. Assemblers and dissemblers (by hand coding)

Flag structure, concept of PSW stacks and subroutines, simple and nested. PUSH, POP instructions and CALL/RETURN instruction. Stack manipulation. Simple programs, Counters and Timing delays.

Interrupts – concept and structure in 8085. Interrupt service routines. Advanced instructions &programming of 8085
and programming.

Methods of data transfer- serial, parallel, synchronous asynchronous. IN/OUT instructions. Timing diagrams simple
hardware interface to 8085 of standard latches/buffers/keys/display devices as I/O ports. Handshaking concepts.

Architecture and interface of 8255 and 8253 to 8085.

Hardware considerations – bus contention. Slow memory interfacing complete signal
description of 8085. Multiplexed key board/display interface and assembler directives,
general awareness about micro-computer system related products.

Reference Books

1. Gaonkar R.S.; Microprocessor architecture; Programming & Applications 8085A Penram International ; 4th
Edition.
2. Uffenbeck J.; Microcomputers and Microprocessors; Prentice Hall of India; 3rd Edition

EEL405 POWER STATION PRACTICE (3-0-0-6)
Contents

Conventional Sources of electrical energy - Steam, Hydro, Nuclear, Diesel and Gas; their scope and potentialities for
energy conversion.

Generation – Different factors connected with a generating station; load curve, load duration curve, energy load
curve; Base load and Peak load plants.

Thermal Stations – Selection of site, Size and no. of units, General layout, Major parts, auxiliaries, generation costs
of steam stations.

Hydro stations – Selection of site, Mass curve, flow duration curve, hydrograph, classification of hydro plants, types
of hydro turbines, pumped storage plants.

Nuclear stations – Main parts, location, principle of nuclear energy, types of nuclear reactors, reactor control,
nuclear waste disposal.

Power station control and interconnection – Excitation systems, excitation control, Automatic voltage regulator
action; Advantage of interconnection.

Alternate energy sources – Solar, wind, geo-thermal, ocean-thermal, tidal wave MHD and biomass;

Reference Books

1. Elements of Electrical Power Station Design – M.V. Deshpande, Wheeler Publishing Co., Allahabad.

2. Generation of Electrical Energy – B.R. Gupta, Eurasia Publishing house, New Delhi, 2003.

EEL302 ELECTRICAL MACHINES-II (3-0-0-6)
Contents
Three phase induction motor: Torque slip characteristics, determination of equivalent circuit parameter, losses and
efficiency, circuit diagram, starting, speed control and breaking, high torque motors(double cage motor), crawling
and cogging, applications.
Three phase synchronous generator: introductions, constructional features of cylindrical and salient pole rotor
machines, Steady state operation of three phase synchronous generators: phasor diagram, regulation. Steady state
performance of three phase synchronous generator.
Synchronizing of generator with another generator, parallel operation, reactances (parameters), and their
measurement (experimental determination), short circuit ratio, losses and efficiency.
Synchronous machines on infinite bus: phasor diagram, expression for torque, load/torque angle, synchronous motor
operation, effects of variable excitation and power input on generator operation and effect of variable excitation and
load on motor operation.
Transient behavior: sudden 3-phase short circuit. Time constants and equivalent circuit diagram, damper windings.
Introduction to special machines: Repulsion motors, AC series motors, Universal motors, Reluctance motor,
Hysteresis motor, Schrage motor, Power selsyns, Position selsyns (only elementary aspects of the above types are
expected).
Reference Books
1. Electrical Machinery by Bhimbra P.S.; Khanna Publishers, Delhi, 1989.
2. Fitzgerald A. E., Charles Kingsley, Jr. Stephen D. Umans; Electric Machinery; Fifth Edition,
3. Tata McGraw-Hill, 1990
4. Mukharjee P. K., Chakravarti S.; Electric M achines (Second Edition); Dhanpat Rai & Sons, 1993.
5. Nagrath I. J., Kothari D. P.; Electric Machines (Third Edition); Tata McGraw-Hill Publishing Company Ltd.,
New Delhi, 2004.
6. General Theory in Electrical Machines by P.S. Bhimbra, Khanna Publishers, Dehli.

EEL307 ELECTRICAL MACHINE DESIGN (3-0-0-6)
Contents
Review of material used in construction of electrical machines. Classification of insulating materials depending
upon permissible temperature rise, properties of transformer oil, standard specifications, C.M.R. and short time
rating of machines. Heating and cooling characteristics.
Transformer design: specific loading, equation for voltage per turn for power and distribution transformer output
equation.
Principle of electric and magnetic circuit, design, method of cooling and cooling circuit design. Estimation of
performance characteristics from the design data.

Inductor motor: main dimensions, output equation, loading constants, estimation of axial lengths, air gap diameter,
winding design.
Air gap length, slot dimension for stator and rotor I.M., cage rotor and wound rotor design, calculation of no load
current and other performance on characteristics for design data.
Synchronous machines: air gap length, methods of obtaining sinusoidal output voltage, field coil design for salient
pole machine and for turbo generator rotor. Ventilation of synchronous generator, cooling air circuits, closed
ventilation/quantity of cooling medium hydrogen and water as cooling media.

Reference Books
1. Say M.G. ; Performance and design of A.C. Machines
2. Sawhney A.K.; Electrical Machine Design; Dhanpatrai and sons, Delhi.
3. Balbir Singh ; Electrical Machine Design; Bright Student Publication,Pune.
4. Vasutinksy S.B.; Power Transformer; P.S.G. College of Technology,Coimbtore.
5. Deshpande H.V.; Electrical Machine Design.

EEP302 ELECTRICAL MACHINES II (0-0-2-2)
Practical
1. To study the speed test and load test on Schrage motor.
2. To determine the ratio Xq/Xd for a synchronous machine by an slip test.
3. To study V and ^ curve of synchronous motor.
4. To determine negative sequence reactance of a synchronous machine.
5. To study the operation and characteristics of an induction generator.
6. To study synchronization of an alternator with an infinite bus.
7. To determine zero sequence and subtransient reactances of a synchronous machine.
8. To determine potier reactance of a synchronous machine by zero power factor
9. characteristics.

7th sem

EEL401 ELECTRICAL POWER SYSTEM-II (3-0-0-6)
Contents
Symmetrical component transformation. Three phase power in unbalanced circuit in terms of symmetrical component. Sequence impedance of generator. Transformer transmission line & passive loads. Phase shift in
Y/delta three phase transformer (Yd1, Yd11 connection)Symmetrical fault analysis without & with pre-fault load
currents. Selection of circuit breakers ratings, current limiting reactors.
Unsymmetrical fault analysis – L-G, L-L-G-, L-L, open conductors fault using symmetrical components.
Stability of power system – steady state dynamic and transient stability defination and differensation. Dynamics of
synchronous machine. Swing equation. Swing equation for machines swinging coherently and non-coherently.
Power angle equation. Steady state stability studies.
Transient stability studies : swing curve, equal area criterion for transient stability Application of equal area

criterion for different disturbances. Solution of swing equation point by point methods of improving transient
stability.
Economic operation of power system: introduction, distribution of load between units within the plant. Optimum
generation scheduling, considering, transmission losses. Representation of transmission loss using loss formula coefficient.
Derivation of loss formula co-efficient. Simulation of co-ordination equation on digital computer.
Grounding of neutral in power system.Shunt & series compensation Generalised equation, shunt reactor compensation of very long line with intermediate switching station. Series capacitor compensation at line centre.
Shunt reactor at both ends and series capacitor in middle of line. Elementary idea of sub-synchronous resonance
problem and counter measures.

Reference Books
1. Elements of power system analysis
2. W.D. Stevenson Jr., 3rd Edition, Mc- GrawHill publications 1974.
3. Power System Engineering – I. J. Nagrath, D. P. Kothari - Tata – Mc- GrawHill publications 1989.
4. Electric Energy Systems Theory, Mc- GrawHill publications 1971. O. I. Elgerd – TMH publications.
5. Power System Analysis - John J. Grainger, W.D. Stevenson Jr., Mc- GrawHill international Editions.
6. Power System Analysis – Hadi Sadat ;Mc- GrawHill international

EEL403 SWITCHGEAR AND PROTECTION (3-0-0-6)
Contents
General philosophy of protective relaying: protective zones. Primary Protection back up protection, remote and
local back up, selectivity. Medium voltage line protection : overcurrent relaying directional over current relays.
High voltage line protection : distance relays, carrier distance schemes. Unit carrier schemes.
Equipment protection: principles of differential relaying, protection of generator, transformers and busbars by
differential relaying and other relays. Protection of induction motor's against overload, short-circuits, thermal
release, miniature circuit breaker.
Introduction to static relays: Comparison of static and electrio-mechanical relays, two input amplitude and phase
comparators and their duality. Generation of various distance relay characteristics using above comparators.
Switchgear : circuit breakers, arc interruption theory, recovery and
restriking voltages, RRRV, breaking of inductive and capacitive current. C.B. ratio, different media of arc interruption, overview of oil circuit breakers, construction and operation of air blast, SF6 and vacuum breakers.

Text Books
1. C.R. Mason.; Art and Science of Protective Relaying.; John Wiley & Sons, New York, 1977.
2. A.R. Van Warrington.; Protective Relaying Vol. I & Vol.II, Chrapman & Hall, London 1969.
3. Badri Ram and D.N. Wishwakarma.; Power System Protection & Switchgeat,; Tata McGraw Hill, New Delhi,
1995.
4. Y.G. Paithankar and S.R. Bhide.; Fundamentals of Power System Protection.; Prentice Hall of India P.Ltd.,2003.

Reference Books
1. Elmore, W.A.; Protective Relaying Theory and Applications, Marcel Dekker Inc. New York, 1994.
2. GEC Measurements.; Protective Relay Application Guide, GEC Ltd., England. 1966.

EEL402 HIGH VOLTAGE ENGINEERING (3-0-0-6)
Contents
Breakdown mechanism in Dielectrics: Iionization process
Townsend's criterion for B.D. : Breakdown in electro-negative gases.
Time-lag for B.D. streamer theory for B.D. in gases. Paschen's law. B.D. in non-uniform fields. Corona
discharges and introduction of corona, post B.D. phenomenon and applications, practical considerations
in using
gases for insulation purpose, vacuum insulation: liquid as insulators. Conduction and B.D. in pure and
commercial
liquids intrinsic electromechanical and thermal B.D., B.D. of solid di-electrics in practice: B.D. in
composite
dielectrics.
Lighting and switching over voltages:
Mechanism of lighting, types of strokes, parameter an characteristics of
lighting strokes, characteristics switching surges: power frequency over voltages control of O.V. due to
switching.
Protection of lines by ground wires, protection by lighting arrester, gap type and gapless L.A. selection of
L.A.
ratings, surge absorbers.
Traveling waves and insulation co-ordination:
Traveling waves on transmission lines. Classification of lines. Attenuation and distortion of traveling
waves.
Reflection and transmission of waves. Behaviors of rectangular waves at transition points. Introduction to
insulation co-ordination Associated terms. Impulse wave-form. Introduction to BIL. Reduced BIL and SIL.
Generation of high voltages and currents:
Generation of high D.C. voltages by rectifiers. Voltage doublers and
multiplier circuits (derivations of not required), electrostatic machines. Generation AC voltages by
transformers.
Resonant transformer. Generation of high frequency AC high voltages. Generation of impulse voltages.
Standard
impulse wave shapes. Analysis of model and commercial impulse generation circuits. Wave shape
control. Marx
circuit. Tripping and control of impulse generation. Generation of switching surges. Generation of impulse
current.
Measurement of high AC and DC voltages by micro ammeter.
Generating voltmeters. Resistance and potential divider. Series impedance voltmeters. CVT. Magnetic
type
potential transformers. Electrostatic voltmeter. Peak reading AC voltmeters sphere measurement.
Measurement
of impulse voltage by potential dividers and peak reading voltmeters. Measurement of high AC DC
currents.
Measurement of high frequency and impulse current by resistive shunted (bifillar strip shunt only)
Non destructive and high voltage testing of electrical apparatus:
Non-destructive testing: Measurement of DC resistively. Measurement
of di-electric constant and loss-factor (low and power frequency only). Schering bridge for high charging
circuits.
For high dissipation factor. For three terminal measurement. Transformer ratio arm bridges. Partial
discharge
measurements by straight detectors by balance detectors, calibration of detectors, Discharge detection in
power
cables. High voltage testing. Testing of insulators and s/s equipments.
Reference Book
1. Naidu, M.S.; Kamaraju,v; High Voltage Engineering; Tata McGraw Hill Publishing India, 1999..
2. Wadhawa, C.L.; High Voltage Engineering, Wiley Eastern Ltd, New Age Ltd, India, 1995.

3. Kuffel E.; High Voltage: Engineering fundamentals; Butterworth-Heineman, 2000.