

ELECTRICAL ENGINEERING DEPARTMENT
SYLLABUS OF PAPER-I FOR JNVU-MPET-2015 AS APPROVED BY THE
DEPARTMENT COUNCIL HELD ON SATURDAY, 30.05.2015

Mathematics:

Matrix Algebra, First order (Linear and Non-Linear) differential equations, Partial differential equations, Laplace Transform.

Circuit Theory:

Thevenin's, Norton's, Superposition, Maximum Power Transfer Theorem and their applications to A.C. & D.C. circuits with dependent and independent sources, Transient response analysis of A.C. and D.C. networks, Three Phase Circuits.

Programming:

Basic Concepts of C, Decision Making Looping, Functions, Parameter Passing, Recursion, Formatted Input & Output Statements.

Electronics:

Diodes, Clipper, Clamper Circuits, Operational Amplifiers, BJT Amplifier, Biasing, Equivalent Circuits, Boolean Algebra, Combinational Circuits – Adder, Multiplexer, Encoders, Sequential Circuits – Flip flops, Counters.

Power Electronics:

Uncontrolled & Controlled Rectifier Circuits, Principle of Choppers.

Measurement:

Measurement of Voltage, Current, Power, Energy and Power Factor, Bridges – Maxwell Inductance & Inductance- Capacitance, Schering & Wien Bridge.

Control System:

Principle of Feedback System, Block Diagram, Signal Flow Graph, Time & Frequency domain Analysis, Introduction to state space representation of control system, Stability Analysis.

Power System:

Fuse & Circuit Breakers, Over Current, Directional, Distance and Field Failure Relays. Protection of Generator & Transformer. Distance Protection & Bus-bar Protection, Thermal, Hydel and Nuclear Power Generation. Transmission & Distribution Systems.

Electrical Machines:

D.C. Machines : Generator, Parallel Operation, Starting & Speed Control of D.C. Motor.

Transformer : Voltage Regulation and Efficiency.

Induction Motor : Torque-Slip Characteristics, Starting & Speed Control.

Alternator Construction & Voltage Regulation

Synchronous Motors, Performance Characteristics & Starting.