श्री चन्द्रशेखरेन्द्र सरस्वती विश्वमहाविद्यालयः
SRICHANDRASEKHARENDRASARASWATHIVISWAMAHAVIDYALAYA
(Accredited with 'A' Grade by NAAC)
(Deemed to be University under section 3 of the UGC Act 1956)
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Syllabus PhD – Entrance Examinations - Department of Electrical & Electronics Engineering

UNIT- I :POWER FLOW ANALYSIS

Powerflowmodelinrealvariableform;Newton'smethodforsolution;AdjustmentofP-Vbuses;Fast Decoupled Power Flow method;Assessment of Available Transfer Capability (ATC) using Power Flow method; Continuation Power Flow method.Review of fault calculations using sequence networks for different types of faults. Bus impedance matrix (ZBUS) construction using Building Algorithm for lines with mutual coupling; Simple numerical problems. Computer method for fault analysis using ZBUS and sequence components. Derivation of equations for bus voltages, fault current and line currents, both in 012 frame and abcd frame using Thevenin's Equivalent and ZBUS matrix for different faults.

UNIT- II :SMART GRID FUNDAMENTALS

Smart grid structure - Interactive grid - Micro grid - Distributed resources modeling Communication infrastructure- Sensing and control devices- Smart grid character. Smart grid structure - Interactive grid - Micro grid - Distributed resources modeling Communication infrastructure- Sensing and control devices- Smart grid character

UNIT –III :POWER CONVERTERS

Power electronic systems - An overview of PSDs - multi-pulse diode rectifier - multi pulse SCR rectifier.PWM current source inverters - DC to DC switch mode converters.Power electronic systems - An overview of PSDs - multi-pulse diode rectifier - multi pulse SCR rectifier.

UNIT –IV:RENEWABLE ENERGY SOURCE:

Generators and power electronics for wind turbines - power quality standards for wind turbines - Technical regulations for interconnections of wind farm with power systems.Introduction of solar systems -merits and demerits – concentrators - various applications.

UNIT –V:POWER QUALITY

Power Quality phenomena - Basic terminologies - various events in power quality - causes for reduction in power quality - power Quality standards.Causes of voltage sags - magnitude and duration of voltage sags - effect on adjustable AC drives, DC drives, computers and consumer electronics - monitoring and mitigation of voltage sags.Origin of Long and short interruptions - influence on various equipment - reliability of power supply - basics reliability evaluation techniques - monitoring and mitigation of interruptions