Master of Technology
Second Semester Examination, June-2021
Reactive Power Control and Facts [MTPS201]

Time: 3:00 Hrs **Max Marks 70**

Note: Attempt any five questions.
All question carry equal marks.

Q.1 Explain Power Transmission Control using UPFC.

Q.2 Differentiate between STATCOM and SVC. Compare Various FACTS devices.

Q.3 Describe Flexible AC transmission system controllers. Enumerate benefits of FACTS controllers.

Q.4 Explain Principle of operation, configuration and control of Static Var Compensator (SVC).

Q.5 Explain Heffron-Phillips model of a SMIB system installed with SVC.

Q.6 Explain Analysis of damp in torque contribution by FACTS based stabilizers installed in SMIB systems. Explain General considerations of FACTS control strategy.

Q.7 Explain Principle of operation of (TCSC) with necessary waveform. Explain?

Q.8 Advantages of Static Var Compensator (SVC).

Q.9 Explain UPFC with Principle of operation, configuration and control. Steady state model of UPFC and (IPFC).

Enrollment No……

Master of Technology

Second Semester Examination, June-2021

Energy Conservation & Management [MTPS202]

Time: 3:00 Hrs **Max Marks 70**

Note : Attempt any five questions.
Each question carry equal marks.

Q.1 Explain:-
(i) Energy Auditing and targeting
(ii) Energy monitoring.

Q.2 Explain Material load energy balance diagram. Explain Energy Conservation and its Policies. Explain how system efficiency is Maximizing.

Q.3 Explain second law of thermodynamics and give its significance? Explain Basic principle of Thermodynamics of Energy Conservation. Explain second law of Thermodynamics.

Q.4 Define Energy monitoring & input energy requirements. Explain waste heat recovery techniques.

Q.5 Explain Check list for top management. What are the essential elements of energy monitoring and reporting?

Q.6 Define thermal insulation. Explain Predictive and preventive maintenance. Explain Load curve analysis and DSM.

Q.7 Explain Various Energy storage for power systems and Cost Benefit Risk analysis. Explain Payback period and time value of money.

Q.8 Write short note on:
(i) Energy conservation in Sugar,
(ii) Energy conservation in Textiles,
(iii) Energy conservation in Cement,
(iv) Energy conservation in process industry.

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Second Semester Examination, June-2021

Power Quality & Conditioning [MTPS203]

Time: 3:00 Hrs **Max Marks 70**

Note : Attempt any five questions
Each questions carry equal marks.

Q.1 **Explain Power quality improvement method. Explain Causes and effects of harmonics. Define harmonics and explain sources of harmonics.**

Q.2 **Explain Power quality and types of power quality disturbances. Explain Causes and effects of power quality disturbances.**

Q.3 **Explain converter configuration and their contribution to supply harmonics.**

Q.4 **Explain types of harmonics and elimination method.**

Q.5 **Explain design of harmonic filters. Explain Radio interference.**

Q.6 **Explain improved power quality converter topologies of single phase Explain improved power quality converter topologies of three phase.**

Q.7 **Explain PWM converter Explain Elimination/suppression of harmonics using active power filters.**

Q.8 Explain classical solutions & their drawbacks of harmonics .Explain design of harmonic filters.

Q.9 **Write Short Notes on:**

(i) Explain constant frequency control
(ii) Explain variable tolerance band control and constant tolerance band control.
(iii) Explain discontinuous current control.

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Second Semester Examination, June-2021

Restructed Power Systems [MTPS204]

Time: 3:00 Hrs **Max Marks 70**

Note : Attempt any five questions out of eight.
All questions carry equal marks.

Q.1 Explain Consumer and Supplier behavior. Explain Short and long run cost. Define Fundamentals of Economics and Various costs of production.

Q.2 Explain Deregulation of power industry and issues involved in deregulation

Q.3 Explain Short and long run cost. Explain Risk hedging functionality.

Q.4 Explain Framework of Indian power sector. Explain Price area congestion management

Q.5 Write short note on Transmission Congestion Management. Explain Congestion and importance of congestion management.. Explain Features of congestion management.

Q.6 Write short note on Locational Marginal Prices and Financial Transmission Rights. Explain Marginal transmission pricing paradigm and Composite pricing paradigm.

Q.7 Explain Lossless DCOPF model for LMP calculation.

Q.8 Explain Deregulation of power industry and issues involved in deregulation.

Enrollment No…….

Master of Technology
Second Semester Examination, June-2021
Power System Transients [MTPS205]

Time: 3:00 Hrs **Max Marks 70**

Note : Attempt any five questions out of eight.
All questions carry equal marks.

Q.1 Explain Lumped and distributed circuit transients. Explain Earth and earth wire effects in power system.

Q.2 Explain dielectric properties of Insulation Coordination. Define breakdown of gaseous insulation. Explain Earth and earth wire effects in power system.

Q.3 Explain circuit breakers working principal and types. Writ short note on Trapped charge effects. Write methods of Control of transients.

Q.4 Write Insulation Coordination. Explain Origin and nature of transients and surges? Explain Origin and nature of transients and surges?

Q.5 Explain Over voltage limiting devices and Trapped charge effects. Explain Line energy station and de-energy station transients.

Q.6 Explain various types of faults in power system. Explain Lightning phenomena.

Q.7 Explain Effect of source and source representation in short line fault studies.

Q.8 Explain Current chopping phenomenon in circuit breakers. Explain Short line fault conditional and its relation to circuit breaker duty.