



SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code : STATIC VAR CONTROLLERS AND HARMONIC FILTERING(19EE2107)

Course & Branch: M.Tech - PE

Year & Sem: I M.Tech & I Sem

Regulation: R18

UNIT –I

- 1 Explain the necessity of reactive shunt compensation in transmission system .Explain the objectives of shunt compensation? 10M
- 2 what are the different types of Reactive Power Compensation Techniques in Transmission lines?10M
- 3 what is the necessity of reactive power controllers? 10M
- 4 Explain the different types of facts controllers. Discuss each in brief. Also discuss the benefits of facts Controllers? 10M
- 5 Explain, how series compensation can be applied effectively to damp oscillations? 10M
- 6 explain about power quality problems in detail? 10M
- 7 Explain, how shunt compensation can be applied effectively to damp oscillations? 10M
- 8 what are the Sources of Harmonics in Distribution Systems? 10M

UNIT -II

1. Explain about thyristor Switched Series Compensators ? 10M
2. Explain about thyristor Controlled Series Compensators? 10M
3. Explain the concept of series capacitive compensation? 10M
4. Explain the enhancement of transient stability by the SVC and STATCOM? 10M
5. Write short notes on Thyristor controlled series capacitor ? 10M
6. Briefly discuss about the static VAR compensators? 10M
7. Explain about Sub-Synchronous Resonance and damping? 10M
8. Explain briefly about SSSC? 10M

UNIT –III

1. Explain the operation of single phase full-wave bridge converter with neat circuit? 10M
2. Explain the transformer connection for 12- pulse operation? 10M
3. Explain the operation of three phase full-wave bridge converter with neat circuit? 10M
4. Explain the transformer connection for 24- pulse operation? 10M
5. Explain about Diode clamped multilevel inverter? 10M
6. Explain the transformer connection for 48- pulse operation? 10M
7. Explain about GTO inverters? 10M
8. i. Write a short note on three level voltage source converters? 5M
ii. Compare between VSC and CSC? 5M

UNIT –IV

1. Explain Single Phase Shunt Current Injection Type Filter and its Control? 10M
2. Explain Three Phase Three-wire Shunt Active Filtering and their control using p-q theory and d-q modeling? 10M
3. Explain three phase four wire shunt active filters? 10M
4. Explain Hybrid Filtering using Shunt Active Filters? 10M
5. Explain Dynamic Voltage Restorer and its control? 10M
6. Discuss about Current Control Schemes Suitable for APF Single Phase Shunt Current Injection Type Filter? 10M
7. Explain Harmonic Current Calculator Single Phase Shunt Current Injection Type Filter? 10M
8. Explain DQ Frame for Shunt Active Power Filters? 10M

UNIT -V

1. Write a brief note on Series Active Filtering in Harmonic Cancellation Mode? 10M
2. Explain about Series Active Filtering in Harmonic Isolation mode? 10M
3. Discuss about V-I and power oscillation characteristics of Series Active Filter? 10M
4. Explain the Series APF in Harmonic cancellation mode? 10M
5. Explain the series APF as a Reactance Compensator? 10M
6. Explain the Series APF in Harmonic isolation mode? 10M
7. Explain the various filters for power quality improvement? 10M
8. Explain the series active filter for power quality improvement? 10M

Prepared by: P. Munisekhar.