

Apollo Institute of Engineering & Technology

Assignment/Question Bank

Branch: EE

Subject Name: Power System Operation and Control (2180909)

- 1 Derive the expression for estimation of average and trend terms of deterministic part of load in load forecasting method.
- 2 Derive the expression for critical receiving end voltage and critical power angle at voltage stability limit for a two bus power system.
- 3 Explain the characteristics of (i) the receiving end voltage of a basic power transmission system for varying system reactance and, (ii) the characteristic of voltage V/s system short circuit capacity for any fixed value of real power flow considering leading, u.p.f. and lagging power factors load.
- 4 Explain role of load dispatch center in power system. What is its role as a part of national grid?
- 5 Derive the expression for voltage regulation of a transmission line and explain its relation with reactive power.
- 6 With necessary block diagrams explain automatic voltage and reactive power control.
- 7 Discuss in brief the application aspects of the primary and secondary automatic load frequency control loops.
- 8 What is power system security? Explain major three function of a power system security and system state classification.
- 9 In weighted least square estimation (WLSE) what do mean by term “weighted”? How it affects the estimation procedure? Explain WLSE method of state estimation in detail.
- 10 What do you mean by deregulation and restructuring of power system?

How it affects power system? Explain its advantages and disadvantages to power scenario of India.

- 11 State different load forecasting techniques. Explain in detail the reactive load forecasting. Also state its advantages.
- 12 What is the role of load forecasting? How it reflects in current and future trends?
- 13 Differentiate automatic generation control action from governor action.
- 14 Define various operating states of power system, nature of various control actions and their significance.
- 15 List a few practical aspects for describing the reactive power flow problem in voltage collapse
- 16 Establish relationships between voltage regulation and reactive power. Explain how it is governed by short-circuits capacity.
- 17 Discuss two-area frequency control with block diagram.
- 18 Discuss estimation of average and trend terms for any load data.
- 19 Give flow chart for contingency selection.
- 20 Obtain necessary relation between maximum power and line length.
- 21 List main components of Automatic voltage control scheme.