

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Summer 2018 - 19 Examination**

Semester: 8

Subject Code: 03106481

Subject Name: POWER SYSTEM OPERATION AND CONTROL

Date: 06/05/2019

Time: 10:30am to 1:00pm

Total Marks: 60

---

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Objective Type Questions - (All are compulsory) (Each of one mark)****(15)**

1. Forecasting technique may be based on \_\_\_\_\_
  - A. Correlation
  - B. Extrapolation
  - C. Determination
  - D. D. All of the above
2. The permissible error for short term load forecasting technique is \_\_\_\_\_
  - A. 10 %
  - B. 1-2%
  - C. 5-10%
  - D. D. 50%
3. Which is TRANSCOS Company \_\_\_\_\_
  - A. GETCO
  - B. MGVCL
  - C. DGVCL
  - D. D. UGVCL
4. Voltage stability is basically \_\_\_\_\_
  - A. Generator stability
  - B. Load stability
  - C. Transformer stability
  - D. D. None of the above
5. A security analysis program normally uses \_\_\_\_\_
  - A. DC load flow
  - B. AC-DC load flow
  - C. AC load flow
  - D. D. Any of the above
6. Permissible changes in power frequency is \_\_\_\_\_ Hz.
7. Write down the equation for state variable in LSE method \_\_\_\_\_.
8. Very short term load forecasting is required with load time is \_\_\_\_\_ (1 hour/ Few seconds to several minutes).
9. What is Load Forecasting?
10. List the types of Linear Sensitivity Factor.
11. What is PV curve in power system?
12. List the types of Stability in power system.
13. Contingency analysis provides operating constrains to be employed in \_\_\_\_\_ (Economic dispatch / Unit commitment).
14. What is Restructuring in power system?
15. What is Voltage collapse?

- Q.2 Answer the following questions. (Attempt any three) (15)**
- A) Explain Power System operating States?
  - B) Explain Application of State Estimation?
  - C) Explain Structure of deregulated Industry in power system.
  - D) Explain reactive power flow and voltage collapse.
- Q.3 A) Draw the flow chart of contingency analysis procedure. (07)**
- B) Describe Least Square State Estimation and also define WLSE methods. (08)**
- OR**
- B) Explain Estimation of  $Y_s(k)$  : Time Series Approach. (08)**
- Q.4 A) Explain with neat diagram different entities involved in deregulation. (07)**
- OR**
- A) State the objectives of short-term, medium-term and long term load forecasting. (07)**
- B) Derive the relation between Q & V (receiving end voltage and power) in two buses System with the help of Q-V Curve. (08)**