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

Semester: 7   Date: 13/05/2019
Subject Code: 03106404   Time: 10:30am to 1:00pm
Subject Name: Power System Analysis   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** - (Fill in the blanks, one word answer, MCQ-not more than Five in case of   **(15)**

MCQ) (All are compulsory) (Each of one mark)

1. How is the voltage and frequency controlled in automatic generation control?

   a)   By controlling the excitation

   b)   By controlling the turbine action70%

   c)   Turbine speed control for voltage and excitation control for frequency

   d)   Excitation control for voltage and turbine speed control for voltage.

2. Which stability information is obtained from the equal area criterion?

   a)   Absolute stability

   b)   Transient stability

   c)   Steady state stability

   d)   Both (b) and (c)

3. What is the fault current expression in case of LLG faults?

   a) $I_f = 3\ I_{a1}$

   b) $I_f = 0$

   c) $I_f = 3\ I_{a0}$

   d) $I_f = I_{a1}$

4. Which among the following methods are highly accurate?

   a)   Gauss Seidel method

   b)   Newton Raphson method

   c)   Fast decoupled low flow method

   d)   All of these

5. What type of convergence takes place in NR method?

   a)   Linear convergence

   b)   Geometric convergence

   c)   Quadratic convergence

   d)   None of these

6. What is the value of acceleration factor used in the GS method?

7. Which bus constitute the maximum number in a power system?

8. Transfer function of non reheat type of steam turbine is of _____order.

9. What percentage of faults occurring of single line to ground fault?

10. Swing curve is plotted between _____and _____

11. What is the main drawback in NR method?

12. What is power system stability?

13. What percentage of fault occurring in the power system is LLG fault?

14. What will be the penalty factor for a unit, if the generating station is located very close to load center?

15. What is steady state stability limit?

Q.2 Answer the following questions. (Attempt any three) **(15)**
A) Difference between N.R, G.S, FDLF.
B) Explain adjustment of governor characteristics in load frequency control.
C) Explain Unit Commitment in Power Generation.
D) List out the methods of voltage control and explain any one.

Q.3 A) Explain Power System Stability. **(07)**
B) Derive the expression of the Transmission Loss Co-efficient in terms of loss Co-efficient. **(08)**
OR
B) With the help of a neat diagram explain turbine speed governing mechanism. **(08)**
Q.4 A) Derive Swing Equation. **(07)**
OR
A) Derive static load flow equations and give classification of buses. **(07)**
B) Draw FDLF Flow Chart. **(08)**