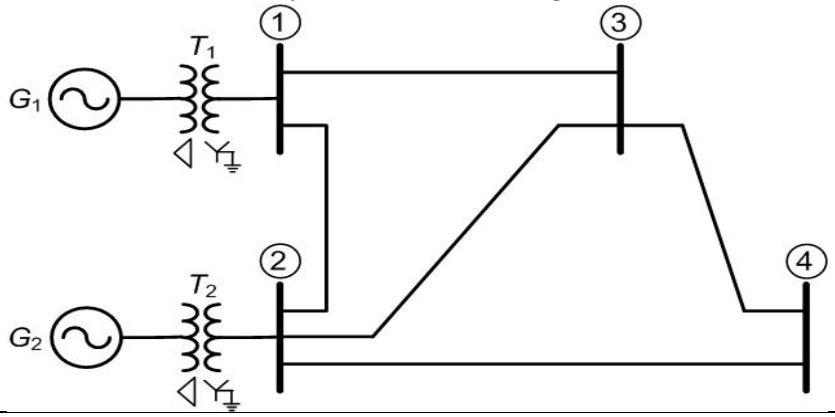
Inter connected Power Systems -Questions

B.E. Sem-VII-Electrical

1.	Explain State load dispatch centre with necessary diagram.
2.	Form Y bus for a sample 3 bus system using singular transformation method. Assume necessary data.
3.	Derive Static load flow equation from the first principal
4.	Compare GS method with NR Method used for load flow study
5.	Explain GS method for load flow solution.
6.	Write short note on "OLTC as voltage control device"
7.	Explain AGC with a neat block diagram.
8.	Step by step method for stability analysis
9.	Methods of improving steady state stability
10	Explain fast decoupled load flow method
11	Explain approximate load flow solution method with necessary assumptions.
12	Explain different methods for real power flow control.
13	What is unit commitment? Explain Dynamic programming method.
14	Discuss different voltage regulating devices and its operation with neat diagram
15	What is AVR explain any one model of AVR with a neat block diagram.
16	Form the Y bus for the system shown in the figure 
17	Explain how P Q Limit hit by the generator is tackled in GS and NR method.
18	What is penalty factor? From the first principle, derive the expression for penalty Factor for the sample system.
19	Explain the applications of load flow study with details
20	Compare SMIB with MMIF stability from the analysis view points
21	What is critical clearing time ? How it can be found out using equal area criteria?
22	Using first principles, derive the swing equation.
23	A 2 pole, 50 Hz, 60 MVA turbo generator has a moment of inertia of 9000 kg-m^2. Calculate: 1. The kinetic energy in MJ at the rated speed. 2. The constants 'M' and 'H'. Also derive relationship for 'M' and 'H'.
24	What is incremental fuel cost? Give the algorithm(steps) for finding optimal loading of

	of generators for system having k no. of generators
25	What is Power system angle stability? Discuss steady state, Dynamic and Transient Stability in a power system.
26	Discuss the methods for improving transient stability in a power system
27	Explain unit commitment problem with necessary expressions.
28	Explain Flat frequency control with neat diagram
29	Explain tie line load bias control.
30	Two synchronous generator operate in parallel and supply a total load of 500 MW. The capacities of the machines are 300 MW and 600 MW respectively and both have droop characteristics of 4% from no-load to full load. Calculate the load taken by each machine, assuming free governor action. Also find the system frequency at this load.
31	Explain the turbine speed governing model.
32	On a system consisting of two generating plants, the incremental costs in Rs/MWhr with P_1 and P_2 in MW are $\frac{dC_1}{dP_1} = 0.15 P_1 + 150$ and $\frac{dC_2}{dP2} = 0.25 P_2 + 175$ The system is operating on economic dispatch with $P_1 = P_2 = 200$MW and $\frac{\delta P_L}{\delta P_2} = 0.2$ Find the penalty factor for plant 1.
33	What are the criteria for the economic distribution of load between different units of a plant when transmission losses are neglected?
34	Derive the static load flow equations. Hence explain the classification of buses.
35	Explain what is meant by cascade tripping.
36	A synchronous generator transmits power to an infinite bus through a reactive network. The sudden occurrence of a fault reduces the generator output to zero. When the fault is cleared, the original network conditions are regained. Derive an expression for the critical clearing angle and the critical clearing time.
37	A synchronous generator is feeding 250 MW to a large 50 Hz network over a double circuit transmission line. The maximum steady state power that could be transmitted over the line with both the lines in operation is 500 MW and is 350 MW with only one line in operation. A solid three phase fault occurring at the network end of one of the lines causes it to trip. Find the critical clearing angle.
38	What is equal area criterion of stability? Explain with necessary diagram.