

Roll No

EX-6002 (CBGS)**B.E. VI Semester**

Examination, May 2018

Choice Based Grading System (CBGS)**Power System-II***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the necessity of interconnected power system. Also write the problems associated with modern interconnected system. 7
b) Discuss the significance of distributed generation in a power system, deregulation environment. 7
2. a) Name different types of power flow studies in power system. Explain one method in detail. 7
b) Compare different types of power flow studies method. 7

3. a) Explain the difference between Y_{BUS} and Z_{BUS} matrix. 7
b) Determine the Y_{BUS} for the 3-bus system shown in Figure - 1. The line series impedances are as follows. 7

Line (bus to bus)	Impedance (p.u.)
1 - 2	$0.06 + j0.18$
1 - 3	$0.03 + j0.09$
2 - 3	$0.08 + j0.24$

Neglect the shunt capacitances of the line.

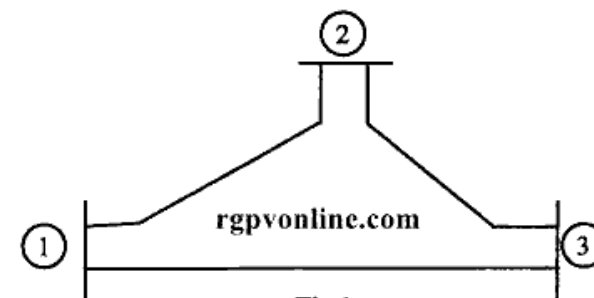


Fig.1

4. a) Explain why it is necessary for keeping strict limits on the system frequency variations. 7
b) A 100 MVA 50Hz turbo alternator operates at no load at 3000 r.p.m. A load of 25mW is suddenly applied to the machine and the steam valves to the turbine commence to open after 0.6 secs due to the time-log in the governor system. Assuming inertia constant H of 4.5 kW-sec per KVA of generator capacity, calculate the frequency to which the generated voltage drops before the steam flow commences to increase to meet the new load. 7

5. a) What is an exciter? What is its role in AVR loop? 7
b) Explain AVR with the help of complete block diagram taking into account modern static excitation system of the alternator. 7
6. a) Discuss in detail about generation and absorption of reactive power in power system components. 7
b) Explain reasons for variations of voltages in power system. Suggest any method for voltage profile improvement. 7
7. a) Derive swing curve? Discuss its applications. 7
b) Discuss the methods for improving Transient stability. 7
8. Write short notes on any two: 2×7
a) Neutral grounding in the power system
b) Economic Dispatch
c) Types of buses in load flows study
d) Power system stability
