Date: 01/01/2015

Student Exam No:-_____

GANPAT UNIVERSITY
M.TECH SEM-I (ELECTRICAL ENGINEERING)
REGULAR EXAMINATION JAN-2015
3EE102:-COMPUTER METHODS IN POWER SYSTEM ANALYSIS

Time: 3 Hours **Total Marks:-60**

Instructions: - 1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

SECTION-I

Que-1 (A) Explain static load flow equations and hence discuss classification of buses. **[05]**
(B) With the help of flow chart explain G-S method in brief. **[05]**

OR

Que-1 **(A)**Explain formation of Y_{BUS} matrix by direct inspection method. **[06]**
(B) State and explain how FDLF method differs from NR method. **[04]**

Que-2 (A)Explain steps involved in constructing Z_{bus} matrix. Discuss all modification in detail. Neglect mutual coupling. **[10]**

OR

Que-2 **(A)** What is approximate load flow study ?.State the assumptions made. **[05]**
(B) Derive Voltage and Current equations for LG fault. Draw sequence diagram. **[05]**

Que-3 **[10]**
(A) What is load forecasting? State the purpose of load forecasting.
(B) Discuss different factors affecting load forecasting.

SECTION-II

Que-4 **(A)**Discuss multiple regression method for load forecasting. **[05]**
(B) What are the functions carried out by operation control center with reference to power system security? **[05]**

OR

Que-4 **(A)**With the help of the suitable example explain the following operating states of power system.(1) optimal dispatch (2)Post contingency (3) Secure dispatch (4)Secure post contingency **[05]**
(B) With the help of flow chart explain contingency analysis using sensitivity factors. **[05]**

Que-5 **(A)**Write the short note onConcentric relaxation and Bounding. **[05]**
(B) What is DC load flow? Explain how it differs from AC load flow. **[05]**

OR

Que-5 **(A)** Explain Weighted Least Square method of state estimation. **[06]**
(B) Define following with reference to state estimation **[04]**
(1) State variable (2) measurement variable (3) Redundancy factor

Que-6 **(A)**Explain What do you understand by Network observability and pseudo measurement ? **[05]**
(B) Discuss about automatic substation control using SCADA. **[05]**

END OF PAPER