

APJ Abdul Kalam Technological University
First Semester M. Tech Degree Examination, December 2015

Cluster: **Kollam**

Branch: ELECTRICAL ENGINEERING

Specialisation: POWER SYSTEMS

Subject: **02EE6221 COMPUTER AIDED POWER SYSTEM ANALYSIS**

Time: 3 Hrs

Max. Marks: 60

Instructions: *Answer All Questions from Part A.*
 Answer Two Full questions from Part B.

PART A

1. (a) Mention the modification of Z_{bus} matrix due to changes in primitive network.
(b) Discuss about development of bus admittance and impedance matrix from graph theoretic approach.
2. Formulate the mathematical model for load flow analysis of a power system using Newton Raphson method .
3. Discuss about short circuit studies of a large power system networks.
4. Discuss the Injection only and line only algorithms of static state estimation.

(4* 9 =36)

PART B

(Answer any two question. Each question carry 12 marks)

5. Discuss in detail about the analysis of single contingencies.
6. Explain the formulation of optimal power flow solution by gradient and Newton's method.
7. Write short notes on
 - (a) Transmission losses for two generator systems.
 - (b) Analysis of multiple contingencies.