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BIEEE-007

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

December, 2015

BIEEE-007 : COMPUTER APPLICATIONS IN POWER SYSTEMS

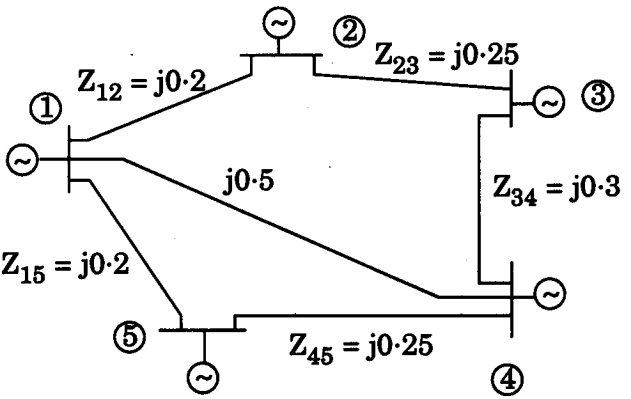
Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions in all. All questions carry equal marks. Use of scientific calculator is allowed.*

1. (a) Explain the hierarchy of transmission and distribution with a suitable diagram. *7*

(b) Differentiate between two-winding transformer and auto-transformer. *7*

2. The parameters of a 5-bus system is given below. Find Y_{BUS}. *14*



3. (a) What is the significance of load flow analysis in a power system ? Give the classification of various types of buses in a power system for load flow studies. *7*

(b) Give a flow chart of load flow study using Newton-Raphson method. How does the method get modified to account for PV buses ? *7*

4. (a) Explain the economic load scheduling of hydrothermal power plant. *7*

(b) What are the different components of power system ? Mention their functions. *7*

5. (a) Compare the performance of Gauss-Siedel and Newton-Raphson method for load flow solution. *7*

(b) Derive the optimum scheduling of thermal power plants considering losses. *7*

6. What is the normal and abnormal operation of power system control and management ? Explain in detail. *14*

7. Write short notes on any ***two*** of the following : *2×7=14*

(a) Loop Matrix and Cut-set Matrix

(b) Bus Impedance Algorithm

(c) Demand Side Management