BIEEE-007

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

Term-End Examination

00653

June, 2018

BIEEE-007 : COMPUTER APPLICATIONS IN POWER SYSTEMS

Time : 3 hours   *Maximum Marks : 70*

Note : Attempt five questions in all. All questions carry equal marks. Assume any data, if missing. Use of scientific calculator is allowed.

1. (a) What do you mean by tap changing transformer ? Obtain partial Y_{BUS} of a tap changing transformer. Show that a tap changing transformer can be represented by a π model only if its turns ratio is real.   7

    (b) Explain the different components of a power system with the help of a diagram.   7

2. (a) Write the advantages and disadvantages of Gauss-Seidel and Newton-Raphson methods.   7

(b) Formulate Y_{BUS} for the network shown in the figure below. The values shown are admittances. 7
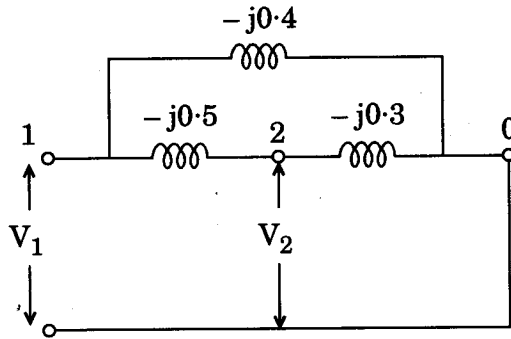
Figure

3. (a) Discuss the algorithm for load flow method using Gauss-Seidel method. 7

(b) Explain oriented graph and a cut-set matrix with the help of a suitable example. 7

4. (a) What is hydro-thermal scheduling ? What do you mean by long term and short term hydrothermal scheduling. How do you justify for cost of water ? 7

(b) How will you obtain the economic operating criterion for hydro-thermal systems with network losses considered ? 7

5. (a) Explain the contingency analysis of a power system and state the approximations associated with it. 7

(b) Explain the structure of electric supply under deregulation condition. 7

6. (a) Discuss the decoupled and fast decoupled method of load flow analysis. 7

(b) What do you mean by normal operation and abnormal operation of power system control ? Explain in detail. 7

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

(a) Two-Winding Transformer and Auto-Transformer

(b) Convergence Criterion for Load Flow Study

(c) Demand Side Management

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