BIEE-025

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

00053 **Term-End Examination**

June, 2018

BIEE-025 : POWER SYSTEM PLANNING AND LOAD FORECASTING

Time : 3 hours *Maximum Marks : 70*

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

1. (a) Explain the role of power system planning and load forecasting in India. 7

   (b) What is quantitative forecasting ? Explain the different types of quantitative forecasting used in power systems. 7

2. (a) Explain various objectives of short-term forecasting in power system planning. 7

   (b) Explain the different techniques used for short-term forecasting for the electricity industry. 7

3. (a) What are the factors affecting accuracy of forecasting methods ? **4**

   (b) Explain the least square estimates for forecasting in power system planning. **10**

4. (a) What are the effects of pattern of data on individual forecasting methods ? Explain in detail. **7**

   (b) Explain the time horizon effect on forecasting methods for power system planning in detail. **7**

5. (a) Discuss the need of generation planning in the Indian context. What are the effects of increasing power from renewable energy sources on generation planning ? **10**

   (b) Enumerate the difference between planning of a transmission system and a distribution system. **4**

6. Discuss the optimization of generation planning according to different categories of generating units. Assume at least three different categories of generating units. **14**

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

(a) Box-Jenkins time series method of forecasting in power systems

(b) Multivariate procedure for long-term forecasting

(c) Selection criterion for a forecasting method during planning stage of power system

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