

**B.Tech. - VIEP - ELECTRICAL ENGINEERING
(BTELVI)**

Term-End Examination

June, 2015

00136

**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) Why is forecasting needed in power system planning? Enlist the current status. 7
- (b) What do you mean by quantitative forecasting? Explain the time series and explanatory forecasting methods. 7
2. (a) What are the factors affecting the accuracy of forecasting methods? 7
- (b) Explain the different short term forecasting techniques in brief. 7
3. Explain in detail the process of generation planning optimized according to different categories of generating units. 14

4. The following table shows the amount spent by different customers in a supermarket. Using least square estimates, calculate SSE (Sum of Squared Errors) and MSE (Mean Squared Errors) for an average spend of 7 and 10. 14

<i>Customers</i>	<i>Amount Spend (₹)</i>
1	9
2	8
3	9
4	12
5	9
6	12
7	11
8	7
9	13
10	9
11	11
12	10

5. (a) How does a pattern of data affect the individual forecasting methods? 7
- (b) Explain the time horizon effects on forecasting methods. 7
6. (a) Describe the fundamental economic analysis for generation planning. 7
- (b) Explain the methods of transmission and distribution system planning. 7

7. Write short notes on the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Peak load forecasting
 - (b) Spatial load forecasting
 - (c) Regression methods
 - (d) Difference between long-term and short-term forecasting
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