

**AQ-2889**

**Faculty of Engineering & Technology**

**M.E. Electrical (Electronics & Power) Engg. Semester—II (New-C.G.S.) Examination**

**POWER SYSTEMS PLANNING & RELIABILITY**

**(Elective—I)**

**Paper—2 EEPME 4**

**Sections—A & B**

**Time : Three Hours]**

**[Maximum Marks : 80**

**INSTRUCTIONS TO CANDIDATES**

- (1) All questions carry equal marks.
- (2) Answer **TWO** questions from Section A and **TWO** questions from Section B.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.
- (6) Use pen of Blue/Black ink/refill only for writing the answer book.

**SECTION—A**

1. (a) Classify the different loads in a power system and explain how their characteristics are useful in forecasting of system load. 10
- (b) Explain in detail the various factors affecting load patterns. 10
2. (a) Explain the peak demand forecasting with the concept of weather sensitivity. 10
- (b) Explain short term load forecasting and explain applications of load forecasting. 10
3. (a) Explain reliability based planning in power system. 10
- (b) Explain risk analysis in power system planning. 10

**SECTION—B**

4. (a) Explain reliability indices of substations based on the over-load capability of the transformers. 10  
(b) Explain computation of power system reliability measures by using Markov reward models. 10
5. (a) Explain reliability indices using the loss of load probability method. 10  
(b) Explain optimal reserve management. 10
6. (a) Explain economic evaluation of reliability. 10  
(b) Explain reliability analysis of protection system for high voltage transmission line. 10