

[Time: Three Hours]

[Max.Marks:80]

N.B Please check whether you have got the right question paper.

- i) Solve any two questions from each section.
 ii) Assume the suitable data if necessary.

Section A

- Q.1 a) What are the electricity forecasting techniques? Explain in detail. 10
 b) How national & regional planning is done? How resource planning & least-cost utility planning implemented? Explain. 10
- Q.2 a) Discuss power sector performance on present situation? 10
 b) Explain Generation planning with current scenarios. 10
- Q.3 Write short note on 20
 a) Modes of contracting
 b) Reactive load forecast
 c) Electricity regulation act
 d) Reforms to power structure

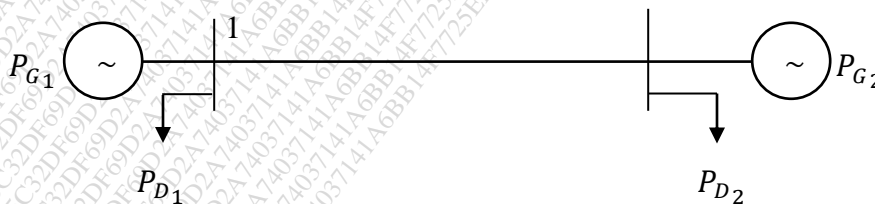
Section B

- Q.4 a) Explain evolution & application of economic scheduling of generation. 10
 b) What is the need of automatic voltage control? How it is implemented? 10
- Q.5 a) Consider the two bus system shown in figure. The incremental production costs at the two generating stations are given by $\frac{dC_1}{dP_1} = 0.005P_1 + 5$ & $\frac{dC_2}{dP_2} = 0.004P_2 + 7$ 10

$$B \text{ coefficients} = \begin{bmatrix} 0.0002 & -0.00005 \\ -0.00005 & 0.0003 \end{bmatrix}$$

Determine the penalty factors at both the buses & also the approximate penalty factors.

Given $\lambda = 8$



- b) Explain two area load frequency control. 10
- Q.6 a) What are the sources & absorbers of reactive power. Explain in details. 10
 b) What is the need of economic dispatch? & explain its control. 10