

M. Tech.-II (Electrical -Power System) (CBCS – 2015 Course) :

WINTER - 2018

SUBJECT: POWER SYSTEM DYNAMICS

Day : Monday
Date : 19/11/2018

W-2018-3152

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION - I

- Q.1** Enlist various power system stabilities and discuss various states of power system during its operation **(10)**

OR

Explain the salient features of the classical model of a system of one machine connected to infinite bus. Derive expression of power co-efficient of machine. **(10)**

- Q.2** Draw and explain block diagram of torque angle loop by derivation of equations for small signal analysis of a single machine. **(10)**

OR

Explain various modes of oscillations in power system and state importance of each in power system stability. **(10)**

- Q.3** Explain the use of Runge-kutta method in stability analysis of power system. **(10)**

OR

Explain the use of pre-calculated swing curves for the analysis of large disturbances on power system. **(10)**

SECTION - II

- Q.4** Explain concept of tuning of PSS and enlist the parameters of tuning performance requirements. **(10)**

OR

Explain washout circuit, dynamic compensator, torsional filter and limiter with respect to PSS block diagram **(10)**

- Q.5** Discuss elementary model of overall power system. Also explain classical multi-machine model of power system **(10)**

OR

Explain the effect of inclusion of load and SVC dynamics in multi-machine modeling **(10)**

- Q.6** Explain technical, administrative and geographical islanding. **(10)**

OR

Discuss control of voltage instability in power system and enlist various factors affecting voltage collapse. **(10)**

* * *