

**M. TECH.-II (ELECTRICAL -POWER SYSTEM) (CBCS – 2015  
COURSE) : SUMMER - 2018  
SUBJECT : - POWER SYSTEM DYNAMICS**

Day: **Monday**  
Date: **11/06/2018**

**S-2018-3014**

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

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**N.B.**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicates full marks.
  - 3) Draw diagrams **WHEREVER** necessary.
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**SECTION - I**

- Q.1** Sketch and explain reactance diagram of a typical two machine's series reactance system with suitable diagram. (10)

**OR**

Explain the salient characteristics of interconnected and integrated power system and describe the state transition model representing the dynamics of power system.

- Q.2** Explain a mathematical model of a cylindrical rotor synchronous machine under steady state condition with suitable phase diagram. (10)

**OR**

Write short note on swing equation.

- Q.3** Explain the use of numerical method in analysis of power system with suitable example. (10)

**OR**

Explain the importance of transient stability in power system.

**SECTION - II**

- Q.4** Enlist important types of power system stabilizers. Elaborate any one type in detail. (10)

**OR**

What do you mean by sub synchronous oscillations? Elaborate the role of power system stabilizer to damp these oscillations.

- Q.5** Explain the effect of inclusion of load and SVC dynamics in multi-machine system model. (10)

**OR**

Derive the relation between machine current and voltage with reference to the matrix representation of multi-machine system model.

- Q.6** Explain P-V and Q-V curves in voltage stability analysis. (10)

**OR**

Elaborate necessity, advantages and disadvantages of islanding.