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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SECOND SEMESTER M.TECH DEGREE EXAMINATION, MAY 2016

Electrical Engineering

(Power Electronics & Power Systems)

04 EE 6418 – Power System Dynamics and Stability

Max. Marks: 60   Duration: 3 Hours

PART A

Answer All Questions

Each question carries 3 marks

1. Define power system stability
2. Draw the power system operating states, showing its all possible directions of transitions
3. State park transformation matrix
4. State swing equation and its significance
5. Draw the nose curve and show the effect of different power factors on its stability
6. What is mean by voltage collapse?
7. Explain the independent-pole operation of circuit breaker
8. Explain dynamic breaking

[08 x 03 = 24 Marks]

PART B

Each question carries 6 marks

9. Draw and explain the structure of a power system, showing its basic elements.

OR

10. Draw and explain the subsystems of a power system and its associated controls.

11. Write notes on transient stability.

OR

12. Write notes on small signal stability. Also show the nature of small disturbance response.

13. Show that the time required for a synchronous machine to accelerate its rotor form standstill to rated speed is two times its inertia constant.

OR

14. Explain the elements of an excitation system

15. Explain the small signal stability of single machine infinite bus system for generator represented by classical model.

OR

16. Draw the block diagram and explain the effect of excitation and AVR on small signal stability.

17. Write notes on continuation power flow analysis

OR

18. Explain the classification of voltage stability

P.T.O.

19. Write notes on power system stabilizer.

OR

20. Explain the procedure of steam turbine fast valving for improving power system transient stability.

[06 x 06 = 36 Marks]