Reg. No. : | | | | | | | | | | |

Question Paper Code: 37032

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Seventh Semester

Electrical and Electronics Engineering

01UEE702 - POWER SYSTEM OPERATION AND CONTROL

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State the difference between p-f and q-v control.
2. List any two information's that can be obtained from a daily load curve.
3. How is the real power in a power system controlled?
4. What is area control error?
5. What are the methods of voltage control?
6. Draw the transfer function model of an amplifier involved in AVR loop.
7. Define spinning reserve.
8. How will you calculate the full load average production cost involved in priority list method for unit commitment?
9. Define FLAPC.
10. Define state estimation.

PART - B (5 x 16 = 80 Marks)

11. (a) What are the information's obtained from load curve and load duration curve. (16)

Or

(b) Illustrate an overview of power system operation and control and explain the role of computers in effective power system operation. (16)

12. (a) Derive the transfer function model and draw the block diagram for a single control area provided with governor system. (16)

Or

(b) Two 1000 *kW* alternators operate in parallel. The speed regulation of first alternator is 100 % to 103 % from full load to no load and that of other is 100 % to 105%. How will the two alternators share a load of 1200 *kW*. (16)

13. (a) Discuss in detail, the static and dynamic analysis of AVR loop. (16)

Or

(b) Draw the diagram of a typical automatic voltage regulator and develop its block diagram representation. (16)

14. (a) Explain the unit commitment problem. With the help of a flow chart, explain forward dynamic programming solution method of unit commitment problem. (16)

Or

(b) Explain various constraints in UC and indicate the steps involved in solving in solving UC by DP method. (16)

15. (a) Draw the power system state transition diagram and explain the various states of the system and control actions to be taken to make the system secure. (16)

Or

(b) Describe the hardware components and functional aspects of SCADA system using a functional block diagram. (16)

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