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**Question Paper Code: 31361**

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

Sixth Semester

Electrical and Electronics Engineering

01UEE601 - ELECTRIC DRIVES AND CONTROL

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Define dynamic torque.
2. Drive the equations governing motor load dynamics.
3. Explain continuous and discontinuous operations.
4. What is time ratio control?
5. List out the different methods of speed control of 3 phase induction motors.
6. What is the significance of field weakening mode control in induction motor drive system?
7. What is meant by power factor control?
8. Explain power factor control of synchronous motor with relevant vector diagram.
9. What is field weakening mode control in dc drives?
10. Compare VSI fed drives with CSI fed drives.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain in detail the multi quadrant dynamics in speed-torque plane. (16)

Or

(b) Derive the mathematical condition to obtain steady state stability of equilibrium point. (16)

12. (a) Explain in detail the single phase fully controlled rectifier control of dc separately excited motor with neat diagrams. (16)

Or

(b) Explain the operation of four quadrant chopper control in dc drives. (16)

13. (a) Explain Variable frequency operation of induction motor in closed loop with constant air-gap flux. (16)

Or

(b) Explain about V/ F control in Induction motor. (16)

14. (a) Explain the closed loop operation of permanent magnet synchronous motor drive in detail. (16)

Or

(b) Explain self-control of synchronous motor drive operated with constant margin angle control. (16)

15. (a) Derive the transfer function of DC motor-load system. (16)

Or

(b) Explain closed loop operation of armature voltage control method with field weakening mode control in detail. (16)

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