

C 1125

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Name.....

Reg. No.....

**SIXTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME]
EXAMINATION, APRIL 2016**

EE/PTEE 09 604—ELECTRIC DRIVES



Time : Three Hours

Part A

Answer all questions.

1. What are the major components of load torque ?
2. List the advantages of regenerative braking of d.c. motor.
3. What do you mean by vector control ?
4. What are the main features of traction drives ?
5. List the various speed control methods of d.c. motor.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Explain the steady state stability of electric drives based on basic load equation.
7. Explain the working of chopper fed d.c. drive operating in second quadrant.
8. Explain the variable frequency control method of induction motor.
9. What are the important features of traction drives ?
10. Explain the current limit control of electric drive.
11. Compare between open loop control and self control modes of operation synchronous motor.

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. (a) Explain : (i) Closed loop speed control ; and (ii) Closed loop torque control of an electric drive.

Or

- (b) Explain the multiquadrant operation of an electric drive.

Turn over

13. (a) Explain single-phase fully controlled converter fed d.c. drives.

Or

(b) Explain four quadrant chopper fed d.c. drive.

14. (a) Explain space vector modulation technique with necessary diagrams.

Or

(b) Explain different speed control methods of induction motor.

15. (a) Explain closed loop control of synchronous motors.

Or

(b) Explain the working of traction drive employing PWM voltage source inverter fed squirrel cage induction motors.

(4 × 10 = 40 marks)