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Question Paper Code : 71634

M.E. DEGREE EXAMINATION, JUNE/JULY 2013.

Second Semester

Power Electronics and Drives

PE 9222/PE 922/10233 PE 202 — SOLID STATE AC DRIVES

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the significance of variable voltage control of induction motor?
2. What is flux weakening operation of induction motor?
3. State the advantages of CSI fed Machines.
4. What are the drawbacks of AC voltage controller?
5. What are the different types of slip power recovery systems?
6. State the advantages of rotor control schemes.
7. Distinguish between direct and indirect field control methods.
8. What are the special features of direct torque control?
9. Mention the advantages of brushless excitation.
10. What is the significance of load commutated synchronous motor drive?

PART B — (5 × 16 = 80 marks)

11. (a) Draw and explain voltage/frequency control of induction motor.

Or

- (b) Explain about various braking methods of induction motors.

12. (a) With a advanced PWM technique design a voltage source inverter to control a induction motor and give its applications.

Or

- (b) Explain about closed loop controlled drive using CSI and mention its advantages.

13. (a) Explain in detail about rotor resistance control of induction motor.

Or

- (b) Explain the operation of static scherbius drive with neat diagram.

14. (a) Explain about direct field control in stator reference frames in detail.

Or

- (b) Write briefly about direct torque control of induction motor.

15. (a) Draw a neat sketch of brush less dc excitation system and explain its operation briefly.

Or

- (b) Explain about control of load commutated synchronous motor drive.