

**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2006**

EE 2 K 505/PTEE 2 K 405—ELECTRICAL MACHINES—II

Time : Three Hours

Maximum : 100 Marks

- I. (a) What is meant by predetermination of voltage regulation ? Explain.
(b) What are the types of d.c. excitation ? Explain any *one* type.
(c) What is meant by lead sharing ? Explain.
(d) What are inverted V curves ? Explain write its significance.
(e) Explain in detail the theory of induction machines.
(f) State double revolving field theory. Explain it.
(g) Mention and explain the advantages of star delta starting.
(h) What are the methods to control the speed of induction motors ? Explain any *one* method.
(8 × 5 = 40 marks)
- II. (a) Describe in detail the construction and principle of operation of alternators, with neat sketches.
Or
(b) (i) Explain the two reaction theory.
(ii) Explain the steps of measurement of losses.
- III. (a) (i) Explain the applications of synchronous generator.
(ii) Explain the phasor diagram for two identical generators in parallel.
Or
(b) Explain the following :—
1 'V' curves ; (2) 'O' curves ; (3) Hunting.
- IV. (a) (i) Explain the production of torque in 3 ϕ induction motors.
(ii) Explain the torque slip characteristics of 3 ϕ induction motors.
Or
(b) Draw the equivalent circuit of single-phase induction motor. Explain its principle of operation.
- V. (a) Explain in detail the different starting methods for 3 ϕ induction motors, with neat sketches.
Or
(b) Explain the basic speed control methods of 3 ϕ induction motors with neat sketches.
(4 × 15 = 60 marks)