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

Question Paper Code : 71442

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Third Semester

Electronics and Communication Engineering

EC 2201/EC 32/EE 1204/080290008/10144 EC 302 — ELECTRICAL ENGINEERING

(Regulation 2008/2010)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define commutation of a dc machine.

2. What are the parameters that could be found using Brake test and Swinburne's test?

3. Define regulation of a transformer. How does it vary with load?

4. What are the various losses taking place in a transformer? State the parts of the transformer in which they occur.

5. Why an Induction motor cannot run at synchronous speed?

6. Why three phase induction motor needs a starter for starting purpose?

7. What are V-curves?

8. Mention some of the applications of a stepper motor?

9. What are the various conventional and non-conventional energy sources in India for power generation?

10. What are the advantages of EHVDC transmission systems?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the constructional details and working principle of a d.c. generator and derive the Induced EMF equation.

Or

(b) Explain with a neat sketch, a three-point starter used for a d.c. shunt motor.

12. (a) Draw and explain the no-load phasor diagram and equivalent circuit of a single-phase transformer.

Or

(b) Explain in detail the O.C. test and S.C. test on a single-phase transformer and what are the information's that can be obtained form the above tests?

13. (a) With a neat diagram describe the construction of a three phase induction motor and give the principle of operation.

Or

(b) (i) Describe the various speed control methods of a three-phase Induction motor. (8)

(ii) Explain the principle of operation of a single phase Induction motor. (8)

14. (a) Explain the construction and working principle of an alternator.

Or

(b) Explain the construction and working principle of a reluctance motor.

15. (a) With a neat diagram explain the structure of a power system.

Or

(b) Describe the various types of distribution system with necessary diagrams.

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