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

Question Paper Code : 11321

B.E/B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2012.

Third Semester

Electronics and Communication Engineering

EC 2201/131307/EC 32/EE 1204/10144 EC 302/080290008 — ELECTRICAL ENGINEERING

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the different methods of excitation of Generator?

2. Define back e.m.f of D.C motor.

3. Write down the e.m.f equation of a transformer.

4. Define voltage transformation ratio of transformer.

5. Define 'slip' of an induction motor.

6. Draw the torque/speed curve of an induction motor.

7. Write down the relation between speed and frequency.

8. Define voltage regulation of an alternator.

9. What are the requirements of a good power system?

10. What is a sub-station?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the constructional details of a D.C. generator, discuss its working principle and derive its e.m.f equation. (16)

Or

(b) (i) Discuss the methods of speed control of D.C. shunt motors. (8)

(ii) How will you predetermine the efficiency of a D.C. machine as motor and generator? (8)

12. (a) With necessary vector diagrams, discuss about transformer on no-load and loaded conditions. (16)

Or

(b) (i) Draw the Equivalent circuit of a transformer with all its notations. (8)

(ii) Write a note on open circuit test on transformer. (8)

13. (a) Explain the construction and working principle of three phase induction motors? What are its advantages and disadvantages? (16)

Or

(b) Write short notes on the following:

(i) Torque developed by an induction motor (8)

(ii) Making single phase induction motor self starting. (8)

14. (a) Discuss the following:

(i) EMF method of finding regulation of an alternator. (8)

(ii) Reluctance motor construction and principle of operation (8)

Or

(b) Write short notes on:

(i) MMF method of determining regulation of an alternator (8)

(ii) Hysteresis motor working principle. (8)

15. (a) (i) Discuss about any one type of insulators used for overhead lines. (8)

(ii) Write a note on cables and list out the main requirements of the insulating materials used for cables. (8)

Or

(b) Draw the layout of a typical substation and discuss the role of various equipments in it. (16)