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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

ELECTRONICS AND COMMUNICATION ENGINEERING

Semester III

EE 295 / EE 9215 Electrical machines / Electrical Engineering

(Regulation 2004 / 2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. List out the different types of dc generators.
2. Define back emf of a dc motor.
3. Why transformer rating in KVA?
4. Define regulation of a transformer.
5. Why single phase Induction motor is not a self-starting one?
6. What is the need for starter in a three-phase Induction motor?
7. What are the advantages of stationary armature in an alternator?
8. What is over excitation and under excitation of a synchronous motor?
9. What are the advantages of interconnected power system?
10. What are the main functions of a sub-station?

Part – B (5 x 16 = 80 marks)

11. With a neat diagram explain the construction and working principle of a dc motor.
 12. a) (i) Derive the emf equation of a transformer. (6)
(ii) Draw and explain the no-load phasor diagram and on load phasor diagram. (10)
- (OR)**
- b) Describe any two methods of measurement of power in three-phase system.
13. a) Explain the working principle, construction and applications of any two types of single phase Induction motor.

(OR)

- b) Explain the speed control of Three Phase Induction Motor by changing the poles and Frequency.

14. a) (i). Explain the working principle of an Alternator. (8)
(ii). Derive the EMF equation of the Alternator. (8)

(OR)

- b) In detail describe the construction and working principle a synchronous motor.

15. a) Write a brief note on:
(i) Thermal power plant. (8)
(ii) Hydro power plant. (8)

(OR)

- b) With a neat diagram describe the radial systems and ring main systems.