Code: R7210405

R07

II B.Tech I Semester (R07) Supplementary May 2012 Examinations
ELECTRICAL TECHNOLOGY

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering, Electronics & Control Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

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1. (a) Explain the principle of operation of DC generator.
   (b) A six pole, lap wound armature has 840 conductors and flux per pole of 0.018 wb. Calculate the emf generated, when the machine in running at 600 rpm.

2. (a) What is the significance of Swinburne's test? Explain with neat circuit diagram.
   (b) Explain the speed control methods used for DC shunt motors.

3. (a) Draw and explain the phasor diagram of transformer when it is operating under load condition?
   (b) Discuss the constructional details of a single phase core type transformer.

4. (a) Discuss the importance of OC and CC tests on a transformer.
   (b) The iron and full load copper losses in a 40 kVA transformer are 450 w and 850 w. Find the efficiency at full load when the power factor in 0.8 lagging?

5. (a) Explain the operation of 3-phase induction motor.
   (b) Explain the slip- torque characteristics of 3-phase induction motors.

6. Discuss in detail the predetermination of regulation by synchronous impedance method with neat circuit diagram.

7. Explain the principle of generation of
   (i) Shaded pole motors.
   (ii) Capacitor motors.

8. Explain the principle and operation of moving coil instrumentation with neat diagram.

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