**BSM5**

**Third Semester B. Tech. Mechanical Engineering**

**Examination Aug/Sep-2015**

**Electrical Machines**

**Time:-3Hours Max. Marks: - 75**

**SECTION-A**

**Answer any five questions. (5\*5)**

1. What is the Structure of Atom?
2. Define the Energy stored in a Capacitor.
3. Mention the Loop Current Analysis.
4. What do you mean by All Day Efficiency and Energy Efficiency?
5. Calculate the Capacitance of this metal plate of area 30 m2 and separated by a dielectric of 2 mm thick and of relative permittivity 6. If the electric field strength in the dielectric is 500 V/mm, calculate the total Charge on each plate.
6. Briefly state the Super Position Theorem.
7. Draw a circuit diagram for Open Circuit test on transformer.

**SECTION-B**

**Answer any two questions. (10\*2)**

1. Describe the Voltage and Current Sources in detail.
2. Give a detail overview of Nodal Voltage Analysis.
3. Write a detail note on Maximum Power Transfer theorem.

**SECTION-C**

**Answer any two questions. (15\*2)**

1. Elaborate the Concept of Transformer in detail.
2. Prove the following:
3. Thevenin’s Theorem
4. Norton’s Theorem
5. Explain a Phasor Diagram with neat sketch.