**E.G.S PILLAY ENGINEERING COLLEGE, NAGAPATTINAM**

**DEPARTMENT OF CIVIL AND MECHANICAL ENGINEERING**

**ONE HOUR TEST - III**

**Sub Code & Name:** GE6252 & Basic Electrical and Electronics Engg. **Date : 12.03.2014**

**Year & Semester:** I & II **Max.Marks :** 30

**Staff Name :** V.Mohan, K.Nandakumar, S.Sivamani. **Time :** 9 am-9.50 am

**ANSWER ALL THE QUESTIONS** 15 X 2 = 30 Marks

1. State the necessity of brushes and commutator in a DC generator.
2. Give the EMF equation of DC generator.
3. What are the different types of DC generator?
4. State the faradays laws of electromagnetic induction.
5. Draw the circuit diagram of DC shunt generator and write down the relationship among the current and voltages.
6. Draw the circuit diagram of DC series generator and write down the relationship among the current and voltages.
7. List the various applications of DC generators
8. The armature of a 4-pole, 600 rpm lap wound generator has 100 slots. If each coil has 4 turns, calculate the flux per pole required to generate an EMF of 300V.
9. A 4 pole machine has 60 slots and 8 conductors per slot. The total flux per pole is 20mwb. For relative speed of 1500rpm, between field flux and armature windings, calculate the generated armature voltage if the machine is a DC machine with lap winding.
10. Draw the circuit diagram of DC shunt motor and write down the relationship among the current and voltages.
11. Draw the circuit diagram of DC long shunt compound motor and write down the relationship among the current and voltages.
12. A 220 V DC motor has armature resistance of 0.5ohm the full load armature current is 20A. Find the induced EMF.
13. Write the voltage equation of the DC motor.
14. Write the expression for torque equation of DC motor.
15. A 4 pole DC motor takes an armature current of 50 A. The armature has 480 lap connected conductors. The flux per pole is 20 mwb.Calculate the gross torque developed by the motor.