**E.G.S.Pillay Engineering College, Nagapattinam**

**Department of Electrical and Electronics Engineering**

**Assignment No – II**

**Sub Code & Name : GE 6252–Basic Electrical & Electronics Engg. Max.Marks:50**

**Year & Sem : I / II Sem Date :**

**Name of the Staff : V.MOHAN / K.NANDAKUMAR/ S.SIVAMANI**

**1) i) Calculate the emf generated by a 6 Pole DC generator having 480 conductors and driven at a speed of 1200 rpm. The flux per pole is 0.012 wb. Assume the generator to be a) lap wound, b) Wave wound. (5)**

**ii) The armature of a 4 pole DC generator has 85 slots and the commutator has 245 segments. It is wound to give lap winding having one turn per coil. If the flux per pole is 35mwb, calculate the generated emf at a speed of 1200 rpm. (5)**

**2) A 4 Pole DC motor is connected to a 500v DC supply and takes an armature current of 80A. The resistance of the armature circuit is 0.4Ω. The armature is wave connected with 522 conductors and useful flux per pole is 0.025wb. Determine the speed of the motor. (10)**

**3) A 250 V, 4 Pole wave wound DC series motor has 782 conductors on its armature. It has armature and series field reistance of 0.75Ω. The motor takes a current of 40A. Determine its speed and gross torque developed if it has a flux per pole of 25 mwb. (10)**

**4) A 20 kVA, Single – phase transformer has 200 turns in the primary and 40 turns in the secondary. The primary is connected to 1000V, 50Hz supply. Determine i) The Secondary voltage on open circuit, ii) The current flowing through the two windings on full-load, iii) The maximum value of flux. (10)**

**5) i) The Primary and secondary voltages of a 25 KVA power transformer are 2200 V and 220 V respectively. The transformer has 56 turns in the secondary. Calculate the number of turns in the primary. (5)**

**ii) The number of primary and secondary turns of an ideal transformer are 150 and 300 respectively. The transformer is connected to a 220 V, 50 HZ source. Determine i) turns ratio, ii) mutual flux in the core. (5)**