Assignment 5

The due date for submitting this assignment is pass.
As per our records, you are not submitted this assignment.

1. Find the synchronous speed of anode-plate 56 Hz AC motor (in rpm).
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 146

2. The rotor of a 4-pole AC machine is excited with a 50 Hz supply which produces a rotating magnetic field that rotates in the aluminium direction with respect to the rotor. The rotor is at rest. At the same time, the rotor is rotated in the opposite direction with respect to the earth (in rpm).
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 300

3. Calculate the frequency (in Hz) of the induced EMF in the rotor?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 250

4. Estimate the RMS value of the induced EMF in each coil group of the rotor (in Volts). The rotor is open-circuited. Given that the rotor armature leakage inductance is 6.2 H. Number of turns per coil group N = 20 with a winding factor K = 0.8.
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 16.4

5. The rotor terminals are close-circuited, and the EMF induced in the rotor starts to drive a current in the rotor circuit and this current will produce a rotating magnetic field. What will be the mechanical speed (in rpm) of the rotor field with respect to the earth?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 300

6. A 4-pole 56 Hz AC machine is running at 360 rpm. Then by what is the speed of the rotor (in rpm)?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 180

7. What is the maximum speed (in rpm) of a 6-pole, 56 Hz induction motor can achieve under absolutely no load and no friction?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 96

8. Given that the number of static turns per phase is 300 and the stator winding factor is 0.86. The number of rotor turns per phase is 90 and the rotor winding factor is 0.95. Both the stator and the rotor are connected in star configuration. If 300 (due to Neutral RMS) supply is connected to the stator, how much voltage will be generated in the rotor (line to Neutral RMS) (in Volts) when the rotor is held stationary?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 48.68

9. In a 5-pole, 6 pole, 56 Hz induction motor, the stator is excited and voltages are put across the rotor winding to measure the voltage induced in the rotor. When the rotor is held stationary, the rotor voltage is found to be 120 V. What could be the value of the induced voltage (in Volts) if the rotor is rotating at 750 rpm?
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 50

9. A 5-pole, 56 Hz induction motor has net flux per pole is given by 0.25 Wb. The winding factor of the rotor is 0.85. Number of turns per coil group of the rotor is 38. Compute the RMS value of the EMF induced (in Volts) in each coil group of the rotor when the rotor is running at a 240 rpm.
   - No attempt is incorrect. Score: 0 %
   - Acceptable Answer: Type: Numerical. 20.28