| Roll No. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Paper Code: MEE-201**

# M.Tech.
# (SEM II) EVEN SEMESTER EXAMINATION, 2015-16
# POWER SEMICONDUCTOR CONTROLLED ELECTRIC DRIVES

**[Time: 3 Hours]** **[Max. Marks: 100]**

**Note:-** Attempt any ***FIVE*** questions out of eight questions. All questions carry equal marks.

**1.** Explain the basic features of an Electric Drive? Explain the block diagram representation of drive systems.

**2.** What are the various types of DC motor Drives classified on the basis of the converters running them?

**3.** Briefly explain the constant torque and constant power methods of speed control of DC motors. Why have these methods been named so?

**4.** A single phase, single pulse controlled rectifier is fed from a 120 volts 60 Hz supply. This provides a variable voltage to the armature of a separately excited DC motor having an armature resistance of 10 ohm. Due to high inertia the motor speed is constant providing a back emf of 50 volts when the thyristor is triggered continuously. Neglecting the armature inductance determine the average value of the current in the motor.

**5.** Explain the different types of chopper circuits. Explain the chopper control of DC motors.

**6.** Explain the variable voltage variable frequency control method of three phase Induction motor. Why does the voltage-frequency characteristic become non-linear at low and high values of speeds? Explain.

**7.** Explain the static Kramer and Scherbius methods of speed control of AC Drives.

**8.** Explain the basic differences between the scalar and vector control methods of speed control in AC Drives. Also explain the field oriented control method of speed control of a three phase Induction motor.