

Entry Number: _____

Name: _____

- 1) Draw the circuit diagram of a classical diode bridge rectifier circuit. Draw the output voltage, and input current waveforms.
- a. Design a classical rectifier to supply $12V \pm 3\%$ to a 24W load, based on a 230V, 50 Hz supply.

[4M]

- 2) A battery is being charged using a full bridge circuit (uncontrolled). The voltage and frequency of supply is 230V, 50Hz respectively. The battery is connected to rectifier circuit through a resistor of 5ohm. If the emf across the battery is 100V, then determine:
- a. The average charging current of the circuit
 - b. Total power delivered to the battery
 - c. Power dissipated in the resistor
 - d. Rectifier efficiency
 - e. If the battery capacity is 2000Wh, then the total time taken to charging.
 - f. Peak inverse voltage (PIV) of the diode

[2M]

- 3) What is the effect inductor on current commutation? Explain in detail with circuit diagram, waveforms. Support your statements with necessary equations.

[4M]