Practice Problems for Rectifier with Filter Capacitor.

1. A certain rectifier filter produces a dc output voltage of 75 V with a peak-to-peak ripple voltage of 0.5 V. Calculate the ripple factor.
2. A certain full-wave rectifier has a peak output voltage of 30 V. A 50 F capacitor-input filter is connected to the rectifier. Calculate the peak-to-peak ripple and the dc output voltage developed across a load resistance.
3. What is the percentage of ripple for the rectifier filter in Problem 2?
4. What value of filter capacitor is required to produce a 1% ripple factor for a full-wave rectifier having a load resistance of 1.5k. Assume the rectifier produces a peak output of 18 V.
5. A full-wave rectifier produces an 80 V peak rectified voltage from a 60 Hz ac source. If a filter capacitor $15\mu F$ is used, determine the ripple factor for a load resistance of 10k.
6. Determine the peak-to-peak ripple and dc output voltages in Figure 2–98. The transformer has a 36 V rms secondary voltage rating, and the line voltage has a frequency of 60 Hz. Consider a full-wave rectifier and RL=3.5k and C=$100\mu F$.

[Consider all the diodes in the problems are Si diode]