A DC power supply consisting of a transformer and a full-wave bridge rectifier with a capacitor filter is shown. The output voltage of the transformer is \( V_2 = 28 \text{ V rms} \) at a frequency of 60 Hz, and the output resistance \( R_L = 3.9 \text{ k\Ohm} \). Assume that the voltage drop across each forward biased diode is 0.7 volts.

1. What is the peak positive voltage seen across the capacitor \( C \) and loaded resistor \( R_L \)?

\[ V_C = \text{________} \]

2. What is the value of the capacitor needed for the peak-to-peak ripple voltage across the load resistor to be 0.4 volts?

\[ C = \text{________} \]

3. What is the DC voltage across the load resistor \( R_L \) considering both the drop across the diodes and the effect of the ripple voltage?

\[ V_{RL} = \text{________} \]

4. What is the DC power delivered to the load resistor?

\[ P_{RL} = \text{________} \]

5. What is the ripple factor for this power supply?

\[ RF = \text{________} \]