

Lab experiment: Part2: Rectifier

1. Connect the half wave rectifier circuit shown in Fig.1. Observe the input and output waveforms for $V_s = 10V_{pp}$, 500Hz sinusoidal signal, $R_L=1K$ and for 1N914 diode.

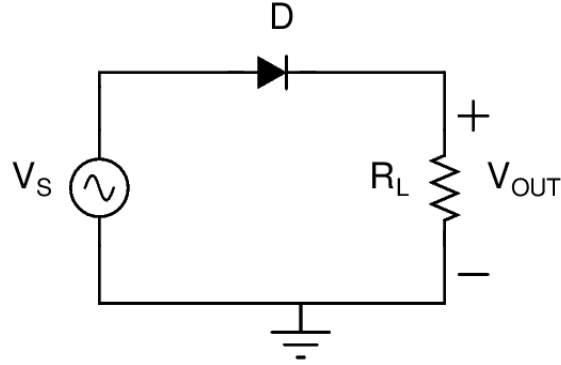


Figure 1: Half wave rectifier

2. Now connect a capacitor of $4.7 \mu F$ across the load resistor R_L . Observe the input and output voltage waveform.
3. Comment on these waveforms.
4. Vary the value of capacitor to $10\mu F$, $47\mu F$, and $100\mu F$ and observe the effect. Repeat for $R_L=10K$. Tabulate the readings in each case to estimate the ripple factor in Table 1 below.
Note: V_{R-PP} is peak-to-peak value of ripple voltage.

$$V_{R-RMS} = \frac{V_{R-PP}}{2\sqrt{3}} \quad (1)$$

$$V_{DC} = V_P - 0.5V_{R-PP} \quad (2)$$

Sr.No	R_L k Ω	C μF	V_{R-PP}	V_{DC}	r
1	1	4.7			
2		10			
3		47			
4		100			
5	10	4.7			
6		10			
7		47			
8		100			

Table 1: The observation table to be filled in