Lab 2 Part 3
Bridge Rectifier

1. Assemble the circuit if Fig. 1:

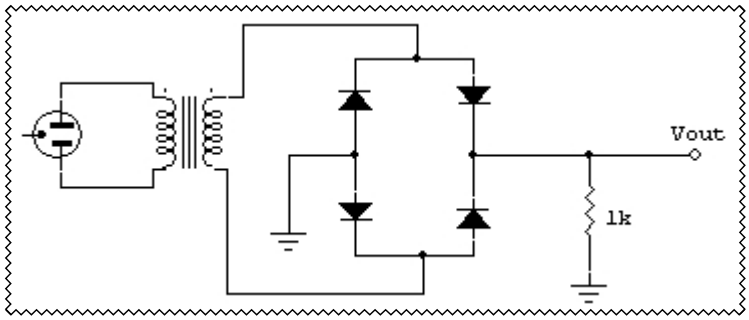

Fig. 1

2. Measure secondary voltage with voltmeter in A.C.: V_{SEC} = _____

3. Calculate peak voltage: V_P = _____

4. Calculate load voltage: V_L = _____

5. Calculate D.C. voltage: V_{DC} = _____

6. Measure D.C. voltage with voltmeter in D.C.: V_{DC} = _____

7. Connect channel 1 of the oscilloscope to V_{OUT} and sketch the output in Fig. 2. Indicate peak voltage and the period of the waveform.

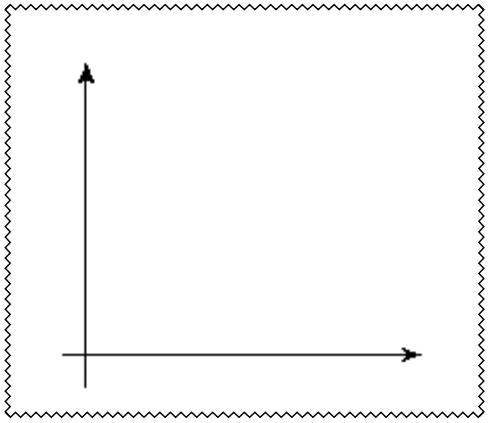
Fig. 2

8. Modify the circuit as in Fig. 3:

9. Measure V_{OUT} with the voltmeter in D. C.
V_{DC} = _____

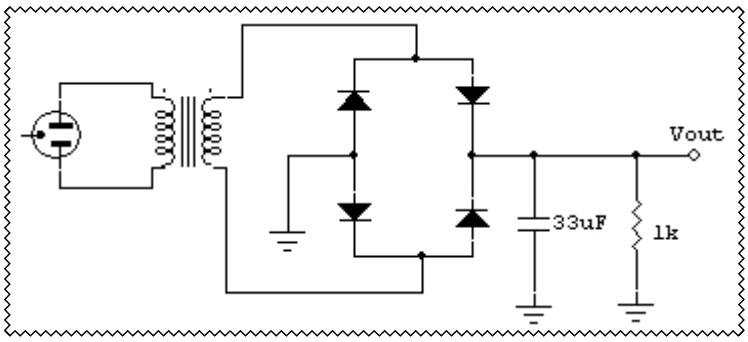

Fig.3

10. Calculate load current: I_L = _____

11. Measure load current with the ammeter in D.C.: I_L = _____

12. Connect channel 1 of the oscilloscope to V_{OUT} and sketch ripple voltage in Fig. 4. Indicate value of peak to peak ripple voltage and the ripple frequency.

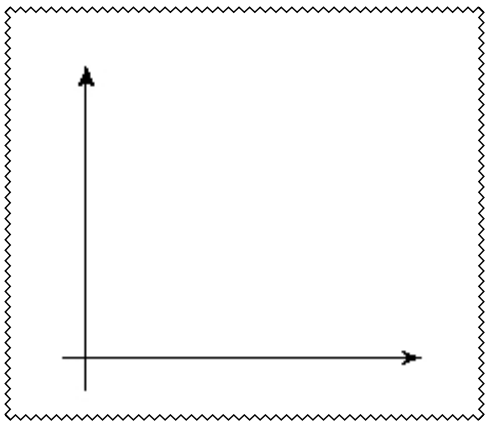

Fig. 4

13. What is the effect of adding a capacitor to the circuit?

14. Modify the circuit in Fig.3 by increasing the capacitor to $470\mu F$:

15. Measure load voltage: V_L = _____

    Measure load current: I_L = _____

16. Again connect the oscilloscope to V_{OUT} and observe the new value of ripple voltage: V_{RIPPLE} = _____

17. What is the effect of increasing capacitance in the circuit?