

Experiment 8

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Aim

- To build a half wave rectifier, filtered half wave rectifier and a negative clamper.

Diagrams

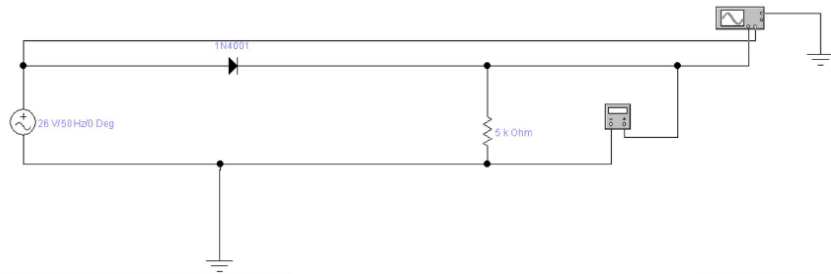


Figure 1: Half wave rectifier

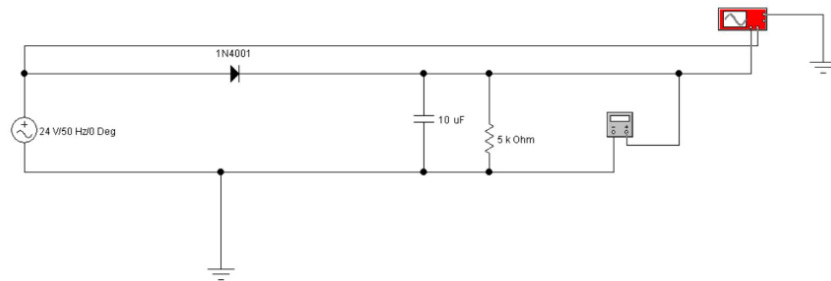


Figure 2: Half wave rectifier with capacitance filter

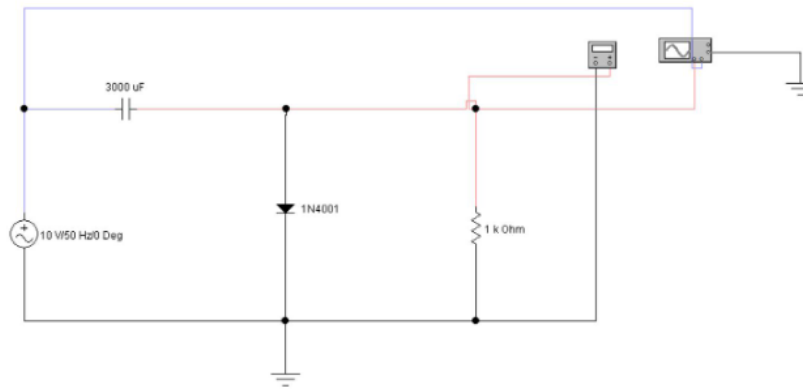


Figure 3: Negative clamper

Theoretical explanations

For the half-wave rectifier we expect to get only the positive half of the signal. With the filtered half-wave rectifier, we expect to get a nearly constant DC output as our RC value is high. For negative clamper we expect the output signal to be clamped below input by some DC component.

Experimental outcomes

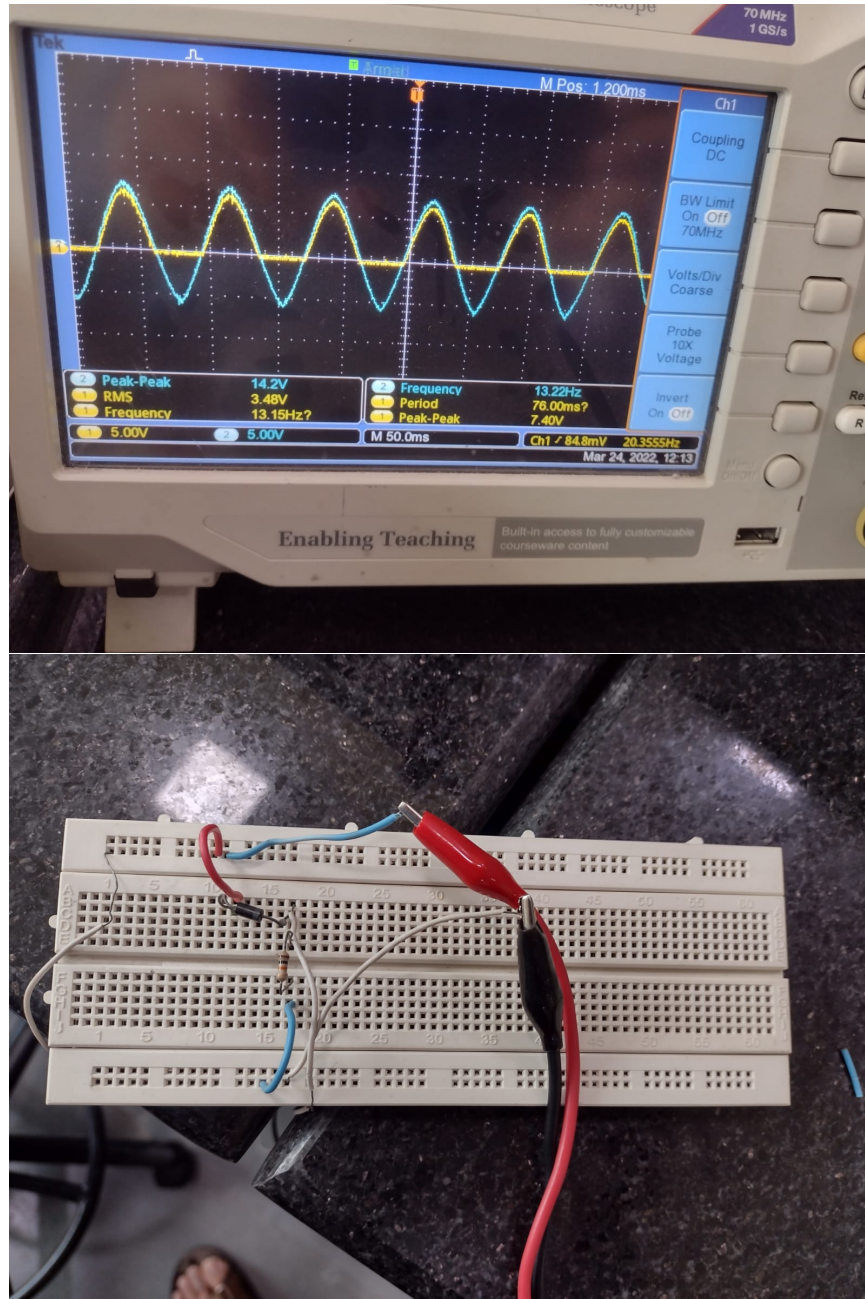


Figure 4: Half wave rectifier

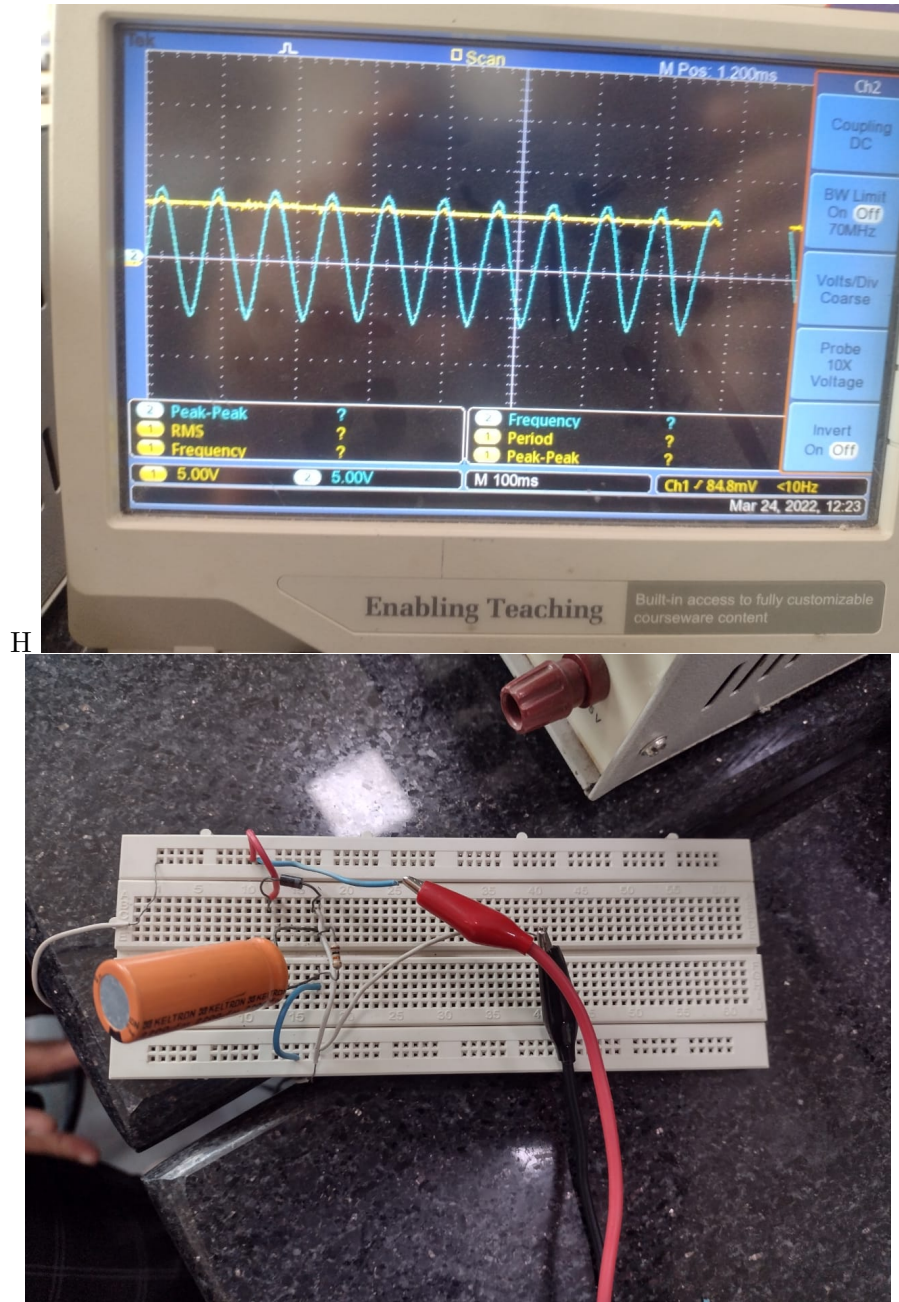


Figure 5: Half wave rectifier with capacitance filter

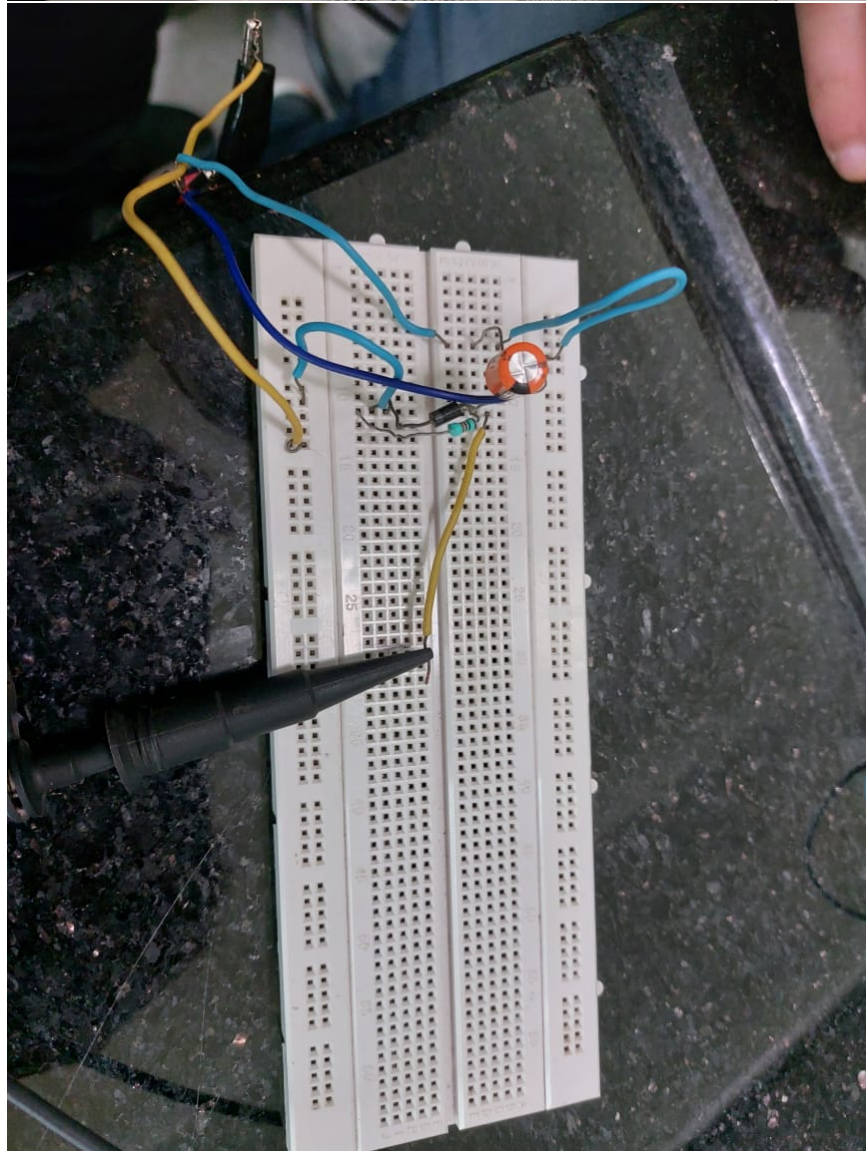
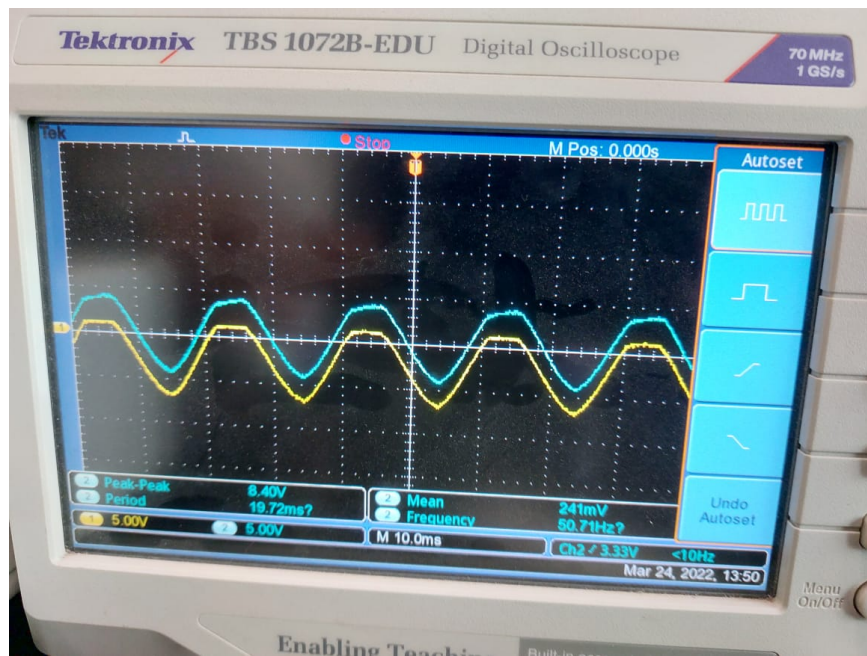


Figure 6: Negative clamper circuit

Conclusion

We note the outputs were in line with theory except for the case of clamper, where our signal generator had a problem and was not generating a proper signal, we also had non-zero offset issue with our signal generator, which led to erroneous result in filtered rectifier and clamper experiment, this though was later fixed with the help of the TA