CTD_Final Hardware Report

NAME

ROLL NO

(Mention if performed in lab)

INDRAPRASTHA INSTITUTE *of*
INFORMATION TECHNOLOGY
DELHI

Resistance

- Test the resistor that you have been provided. Note the values of the resistors based on colour coding. Then measure the resistance with multi-meter. For each resistor, note whether the measured resistance is within the tolerance range of the rated values. 0.25 marks

Rated resistance (based on colour code)	**Specified tolerance (based on colour code)**	**Measured resistance**	Is it within the tolerance?

Diode

- Check whether the diodes are working correctly with the multi-meter.

Diode number(1N4007)	Functional
1	
2	
3	
4	

Transformer

- Visually inspect the transformer and check for any frayed wires or if windings are broken anywhere. Connect the multi-meter leads across the primary windings. If the wire is broken or damaged, then it should fail the continuity test. Similarly test the secondary windings. Do continuity test between the primary windings of the transformer and the secondary windings of the transformer. 0.25 marks

Continuity test results on transformer	
Across primary windings	
Across secondary windings	
Between primary and secondary	

Datasheet-Diode & IC7805

Read the Datasheet of Diode and IC7805 and note the following points:

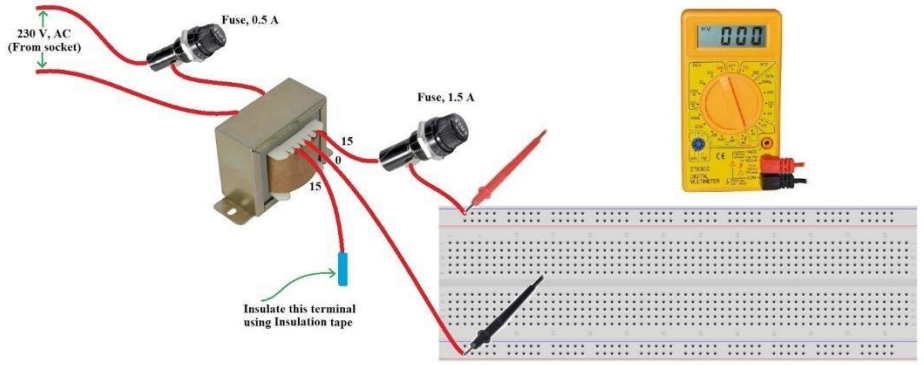
- Physical structure/package information
- Absolute maximum rating
- Recommended operating condition
- Electrical characteristics
- Drift of the component value from its rating

0.5 marks for data sheet reading and extracting information.

Components used in hardware implementation

Step_1:

- Make the circuit as shown in diagram and note down the value:

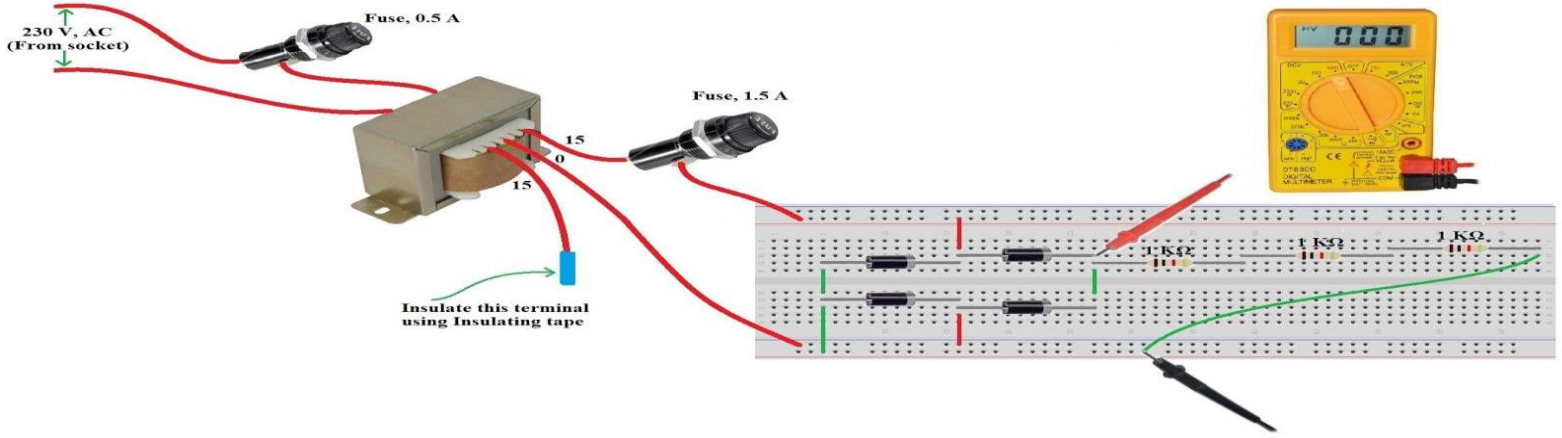


Practical Measurement (RMS)			Simulation Results(RMS)		
V_{sec}	I_{sec}	P_{sec}	V_{sec}	I_{sec}	P_{sec}

0.25 marks

Step_2

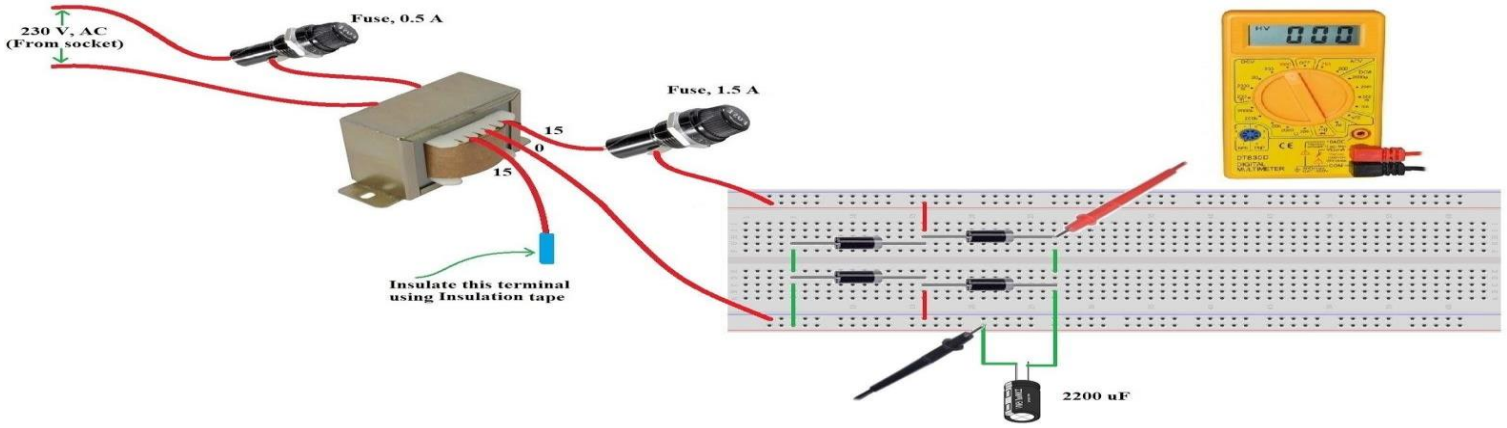
- Connect the bridge rectifier and check the output & compare with your simulation results. 0.25 marks



	Practical Measurement (RMS)			Simulation Results(RMS)		
R_{load}	$V_{rectifier}$	$I_{rectifier}$	$P_{rectifier}$	$V_{rectifier}$	$I_{rectifier}$	$P_{rectifier}$
3K						

Step_3:

- Complete the circuit with bridge rectifier and smoothing capacitor, as shown in figure below. Note done the readings mentioned in table.

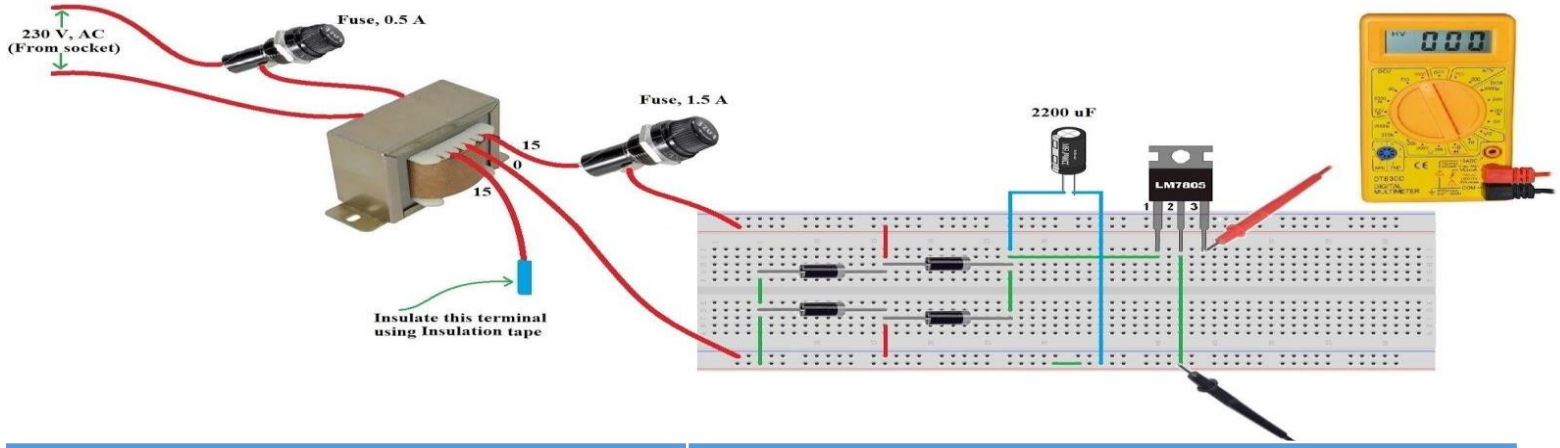


Practical Measurement (Average)	Simulation Results(Average)
Vcap	Vcap

0.25 marks

Step_4

- Connect the voltage regulator IC and check the output & compare with your simulation results.

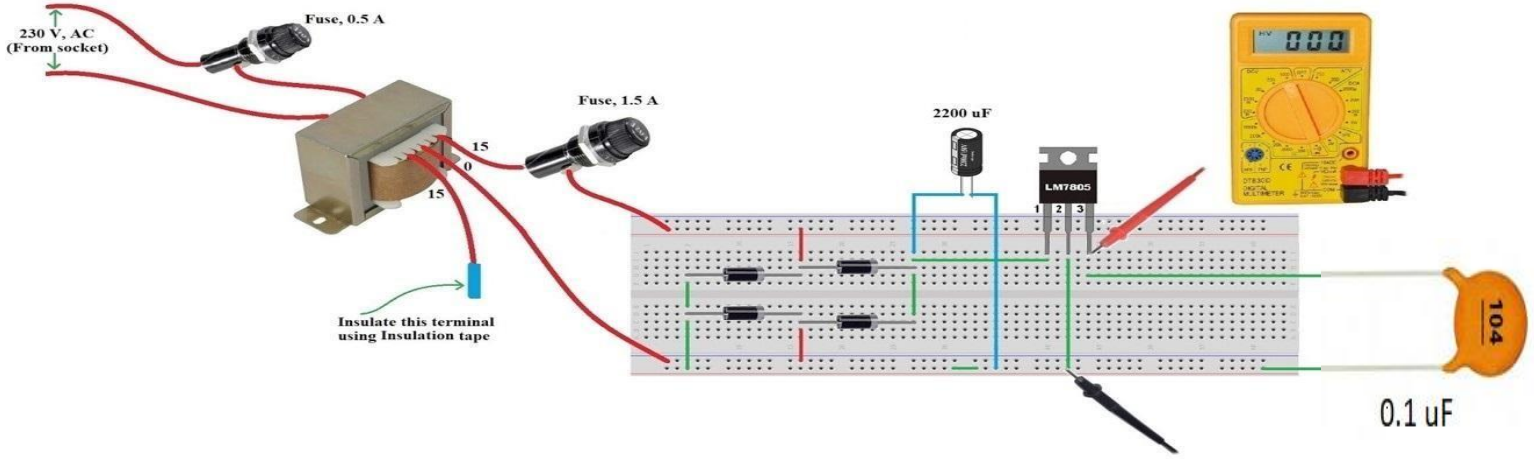


Practical Measurement (Average)	Simulation Results(Average)
$V_{regulator}$	$V_{regulator}$

0.25 marks

Step_5

- Connect the load capacitance and check the output & compare with your simulation results.

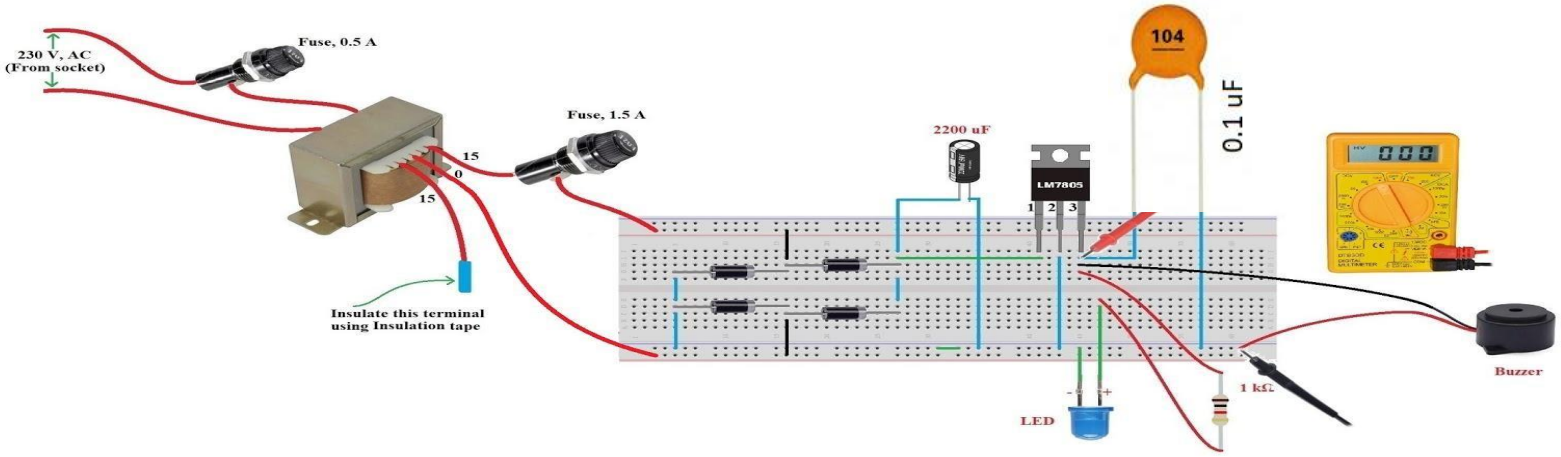


Practical Measurement (Average)	Simulation Results(Average)
Vcap(o/p)	Vcap(o/p)

0.25 marks

Final_Circuit

- Finally connect the buzzer and led to o/p and answer the following questions.



Is buzzer beeping?
Is led glowing?

0.5 marks

Snapshot of Final Circuit

1 mark

- Neat connections
- Each stage/components should be clearly visible
- Use as minimum wires as possible

Video_Presentation

1 mark

- Insert Video (Give access)
- Max limit: 2 min
- Explain each stage/your circuit clearly

Conclusion

0.25 marks

Explain the use of each stage in the circuit (Transformer, Filter, Rectifier, Voltage Regulator, Noise Cancellation