Week 1 Assignment 1

1. The figure shows a circuit with a voltage source and a current source. Calculate the power absorbed by each component.

2. The diagram illustrates a simple RC circuit. Determine the time constant of the circuit and explain what it represents.

3. In the circuit shown, identify the components that form the parallel combination and the series combination.

4. The figure represents a basic RC circuit. Explain the role of each component in determining the circuit's behavior.

5. From the diagram, deduce the voltage division principle and apply it to calculate the voltage across a specific resistor.

6. The circuit diagram shows a combination of resistors in both series and parallel. Calculate the equivalent resistance of the circuit.

7. The figure depicts a complex RC network. Identify the key points where voltage drops occur and explain the path of the current.

8. In the circuit, determine the total resistance when multiple resistors are connected in parallel.

9. From the given diagram, calculate the current flowing through a specific resistor by applying Ohm's law.

10. The figure illustrates a circuit with multiple voltage sources. Explain the concept of superposition and how it applies to this circuit.

11. The circuit shown contains multiple sections connected in series and parallel. Calculate the overall resistance and current flow.

12. From the diagram, deduce the concept of superposition and its application in complex circuits.