**ELT-111 CIRCUIT ANALYSIS I**  
Parallel Circuits Sample Test

1. For the circuit above, complete the following chart.

<table>
<thead>
<tr>
<th>P/S</th>
<th>R1</th>
<th>R2</th>
<th>Rt</th>
<th>V1</th>
<th>V2</th>
<th>Vt</th>
<th>I1</th>
<th>I2</th>
<th>It</th>
<th>P1</th>
<th>P2</th>
<th>Pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>60</td>
<td>Ω</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8Ma</td>
</tr>
</tbody>
</table>

11. For the circuit above, complete the following chart.

<table>
<thead>
<tr>
<th>P/S</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>Rt</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
<th>It</th>
<th>Pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td>8 v</td>
<td></td>
<td></td>
<td>200 ma</td>
<td></td>
</tr>
</tbody>
</table>

17. For parallel elements, total conductance is the sum of the individual conductances.

18. The total resistance of a parallel resistor network is always more than the value of the smallest resistor.

19. Kirchhoff’s current law can be used only if three or more currents are associated with a given junction.
20. The total parallel resistance of N equal resistors, each with a value R, is N x R.

21. According to the current divider rule, current divides in a parallel network such that the smallest resistor always draws a smaller share of the total current.

22. The total conductance of a 4 Ω and a 2 Ω resistor in parallel is
   a. .75 S  
   b. 1.33 S  
   c. 6 S  
   d. 8 S

23. What is the total resistance of one thousand 10k Ω resistors in parallel?
   a. 1 Ω  
   b. 10 Ω  
   c. 10k Ω  
   d. 10M Ω

24. A circuit with no available path for current flow is an:
   a. Closed Circuit  
   b. Long Circuit  
   c. Open Circuit  
   d. Short Circuit

25. Two voltage sources connected in parallel
   a. Add algebraically  
   b. Violate Kirchhoff's voltage law if they have different output voltages  
   c. Cancel each other, producing a net voltage of zero.  
   d. Are more economical than a single large voltage source.

26. As additional resistors are added to a parallel circuit, what will happen to total resistance?
   a. Total resistance will increase  
   b. Total resistance will decrease  
   c. Total resistance will remain the same  
   d. Total resistance will only be affected by resistors of equal value

27. A circuit consists of two resistors in parallel with each other. R1 = 60 ohms and R2 = 120 ohms. The circuit has 10 volts applied. An ammeter, placed to read total current is reading .17 amps. What is the problem with the circuit?
   a. There is no problem  
   b. R1 is open  
   c. R2 is open  
   d. Applied voltage is low

28. When a branch of a parallel resistance network is replaced by an open circuit, will the total resistance increase, decrease, or stay the same?