| Name | Tags | Description |
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| 19BT20251 | easy | A Network has 12 branches and 8 Independent Loops. How many nodes are there in the network ?<br>**Ans: 5**<br>**How?**<br>**n = b – l + 1** |
| 19BT20251 | Moderate | A Super Node Consists of<br>**Ans: A voltage source and two non reference nodes**<br>**Explanation:**<br>**Whenever a voltage source (Independent or Dependent) is connected between the two non reference nodes then these two nodes form a generalized node called the Super node** |
| 19BT20251 | Moderate | A Super Mesh Consists of<br>**Ans: A current source and two meshes**<br>**Explanation:**<br>**This is a situation where two electrical closed loops (meshes) have a common current source between them.** |
| 19BT20251 | Easy | Nodal Analysis is<br>**Ans: Nodal Analysis is a method of analyzing circuits based on defininig node voltages as the variables.**<br>**The technique of nodal analysis can be used to analyze circuits with reactive components.**<br>***Procedure:***<br>• **Step 1 − Identify the principal nodes and choose one of them as reference node. We will treat that reference node as the Ground.**<br>• **Step 2 − Label the node voltages with respect to Ground from all the principal nodes except the reference node.**<br>• **Step 3 − Write nodal equations at all the principal nodes except the reference node. Nodal equation is obtained by applying KCL first and then Ohm's law.**<br>• **Step 4 − Solve the nodal equations obtained in Step 3 in order to get the node voltages.** |
| 19BT20251 | Easy | Mesh Analysis is |

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| | | **Ans: Mesh analysis is a method that is used to solve planar circuits for the currents at any place in the circuit. Planar circuits are circuits that can be drawn on a plane surface with no wires crossing each other**<br>**Procedure:**<br>• **Step 1** − Identify the **meshes** and label the mesh currents in either clockwise or anti-clockwise direction.<br>• **Step 2** − Observe the amount of current that flows through each element in terms of mesh currents.<br>• **Step 3** − Write **mesh equations** to all meshes. Mesh equation is obtained by applying KVL first and then Ohm's law.<br>• **Step 4** − Solve the mesh equations obtained in Step 3 in order to get the **mesh currents**. |
| 19BT20251 | Easy | For Superposition Theorem, Which of the Following is Correct? |
| 19BT20251 | easy | The Norton Resistance is exactly equal to the Thevenin Resistance<br>Ans: True<br>Explanation:<br>Thevenin and Norton's resistances are equal.<br>Thevenin voltage is equal to Norton's current times Norton resistance.<br>Norton current is equal to Thevenin voltage divided by Thevenin resistance. |
| 19BT20251 | Moderate | While Considering Reciprocity Theorem, We consider ratio of response to excitation as Ratio of<br>**Ans: Voltage to Current** |
| 19BT20251 | Moderate | For the Reciprocity Theorem to satisfy the ratio of Response to excitation before and after the source is replaced, Should be ?<br>**Answer: Same**<br>**Explanation: For the Reciprocity Theorem to satisfy the ratio of response to excitation before and after the source is replaced should be same and if that condition satisfies the reciprocity theorem is valid for the given circuit.** |

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| 19BT20251 | Moderate | In Superposition Theorem, When we consider the effect of one voltage source, all the other voltage sources are<br>**Ans: shorted**<br>**Explanation: In superposition theorem when we consider the effect of one voltage source, all the other voltage sources are shorted and current sources are opened.** |
| 19BT20251 | Moderate | In Superposition Theorem, When we consider the effect of one Current source, all the other Current sources are<br>**Ans: opened**<br>**Explanation: In superposition theorem, whether we consider the effect of a voltage or current source, current sources are always opened and voltage sources are always shorted.** |
| 19BT20251 | Moderate | Which of the following methods allows us to convert a practical voltage source into a practical Current Source ?<br>**Ans: Methods like Thevenin's theorem and Norton's theorem allow us to convert voltage sources to current sources** |