### 3.7.3.3 D Flip-Flop

#### Clocked D Flip-Flop Characteristic Table

<table>
<thead>
<tr>
<th>D</th>
<th>Present State $Q(t)$</th>
<th>Next State $Q(t+1)$</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Reset</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

#### Clocked D Flip-Flop Excitation Table

<table>
<thead>
<tr>
<th>$Q(t)$</th>
<th>$Q(t+1)$</th>
<th>$D$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Clocked D Flip-Flop Logic Diagram

#### Clocked D Flip-Flop Schematic Symbol