**DLD LAB 11**

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SECTION: H

QUESTION#03:

S-R LATCH:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Inputs** | | **Outputs** | | **Comments** |
| **S** | **R** | **Q** | **Q’** |
| 0 | 0 | Latch | Latch |  |
| 0 | 1 | 0 | 1 | RESET |
| 1 | 0 | 1 | 0 | SET |
| 1 | 1 | 0 | 0 |  |

GATED S-R LATCH:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Inputs** | | **Outputs** | | **Comments** |
| **EN** | **S** | **R** | **Q** | **Q’** |
| 0 | X | X | Latch | Latch |  |
| 1 | 0 | 0 | Latch | Latch |  |
| 1 | 0 | 1 | 0 | 1 | RESET |
| 1 | 1 | 0 | 1 | 0 | SET |
| 1 | 1 | 1 | 0 | 0 |  |

GATED D LATCH:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Inputs** | | **Outputs** | | **Comments** |
| **EN** | **D** | **Q** | **Q’** |
| 1 | 0 | 0 | 1 | SET |
| 1 | 1 | 1 | 0 | RESET |
| 0 | X | Q0 | Q0’ | No Change |

QUESTION#04:

1. TYPES OF LATCHES:
2. S-R LATCH
3. GATED S-R LATCH
4. GATED D LATCH
5. When D=1 and EN=1 the output is Q=1.

QUESTION#05:

1. FALSE
2. TRUE
3. FALSE

QUESTION#06:

1. Two NOR gates (a)
2. S’ = 1, R’ = 0, Q = 1, Q’ = 0 (c)
3. D = HIGH, EN = HIGH (d)