| Test Case | Current State | Inputs | | | | | | Internal | | | | | Expected o/p | | | | | Next State |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | V | E | C | U | L | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_1D_2D_3D_4$ = Code | B | R | Y | G | X | |
| 22 | $S_4$ | T | ✓ | F | F | F | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | T | T | $S_4$ |
| 23 | $S_4$ | F | - | F | F | T | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | T | T | $S_4$ |
| 24 | $S_4$ | F | - | F | F | F | T | ✓ | ✓ | ✓ | ✓ | — | F | F | F | T | T | $S_4$ |
| 25 | $S_4$ | F | - | F | T | F | F | ✓ | ✓ | ✓ | NULL | — | F | F | T | F | T | $S_3$ |
| 26 | $S_4$ | F | - | T | F | F | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | F | T | $S_5$ |
| 27 | $S_5$ | T | ✓ | F | F | F | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | F | T | $S_5$ |
| 28 | $S_5$ | F | - | T | F | F | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | F | T | $S_5$ |
| 29 | $S_5$ | F | - | F | T | F | F | ✓ | ✓ | ✓ | ✓ | — | F | F | F | F | T | $S_5$ |
| 30 | $S_5$ | F | - | F | F | F | T | ✓ | ✓ | ✓ | ✓ | — | F | F | F | F | T | $S_5$ |
| 31 | $S_5$ | F | - | F | F | T | F | NULL | NULL | NULL | NULL | — | F | F | F | F | T | $S_6$ |
| 32 | $S_6$ | F | - | F | F | F | F | NULL | NULL | NULL | NULL | NO | F | F | F | F | T | $S_0$ |
| 33 | $S_6$ | F | - | F | F | F | F | NULL | NULL | NULL | NULL | YES | T | T | T | T | F | $S_7$ |
| 34 | $S_7$ | T | ✓ | F | F | F | F | NULL | NULL | NULL | NULL | — | T | T | T | T | F | $S_7$ |
| 35 | $S_7$ | F | - | T | F | F | F | NULL | NULL | NULL | NULL | — | T | T | T | T | F | $S_7$ |
| 36 | $S_7$ | F | - | F | T | F | F | NULL | NULL | NULL | NULL | — | T | T | T | T | F | $S_7$ |
| 37 | $S_7$ | F | - | F | F | T | F | NULL | NULL | NULL | NULL | — | F | F | F | F | F | $S_0$ |
| 38 | $S_7$ | F | - | F | F | F | T | NULL | NULL | NULL | NULL | — | | | | | | |

| Test Case | Current State | N | V | E | C | U | L | D1 | D2 | D3 | D4 | D1D2D3D4 = Code | B | R | Y | G | X | Next State |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Start | – | – | – | – | – | – | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 2 | $S_0$ | F | – | T | F | F | F | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 3 | $S_0$ | F | – | F | T | F | F | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 4 | $S_0$ | F | – | F | F | T | F | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 5 | $S_0$ | F | – | F | F | F | T | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 6 | $S_0$ | T | V | F | F | F | F | V | NULL | NULL | NULL | – | T | F | F | F | T | $S_1$ |
| 7 | $S_1$ | F | – | T | F | F | F | V | NULL | NULL | NULL | – | T | F | F | F | T | $S_1$ |
| 8 | $S_1$ | F | – | F | F | T | F | V | NULL | NULL | NULL | – | T | F | F | F | T | $S_1$ |
| 9 | $S_1$ | F | – | F | F | F | T | V | NULL | NULL | NULL | – | T | F | F | F | T | $S_1$ |
| 10 | $S_1$ | F | – | F | T | F | F | NULL | NULL | NULL | NULL | – | F | F | F | F | T | $S_0$ |
| 11 | $S_1$ | T | V | F | F | F | F | V | V | NULL | NULL | – | F | T | F | F | T | $S_2$ |
| 12 | $S_2$ | F | – | T | F | F | F | V | V | NULL | NULL | – | F | T | F | F | T | $S_2$ |
| 13 | $S_2$ | F | – | F | F | T | F | V | V | NULL | NULL | – | F | T | F | F | T | $S_2$ |
| 14 | $S_2$ | F | – | F | F | F | T | V | V | NULL | NULL | – | F | T | F | F | T | $S_2$ |
| 15 | $S_2$ | F | – | F | T | F | F | V | NULL | NULL | NULL | – | T | F | F | F | T | $\underline{S_1}$ |
| 16 | $S_2$ | T | V | F | F | F | F | V | V | V | NULL | – | F | F | T | F | T | $S_3$ |
| 17 | $S_3$ | F | – | T | F | F | F | V | V | V | NULL | – | F | F | T | F | T | $S_3$ |
| 18 | $S_3$ | F | – | F | F | T | F | V | V | V | NULL | – | F | F | T | F | T | $S_3$ |
| 19 | $S_3$ | F | – | F | F | F | T | V | V | V | NULL | – | F | F | T | F | T | $S_3$ |
| 20 | $S_3$ | F | – | F | T | F | F | V | V | NULL | NULL | – | F | T | F | F | T | $S_2$ |
| 21 | $S_3$ | T | V | F | F | F | F | V | V | V | V | – | F | F | F | T | T | $S_4$ |