Samostatná práce č. 3a – autorské řešení

Diagnostika a spolehlivost číslicových systémů - PV171

Sestavte lokalizační a detekční test obvodu na obrázku níže. K odvození kroků testů poruch uvnitř obvodu použijte libovolnou metodu.

 ***Řešení:***

je třeba najít kroky testu pro všechny poruchy ve vnitřních uzlech obvodu

1

2

3

4

5

6

7

8

9

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| --- | --- | --- |
| ***5t0 (M1)*** | ***1, 2, 5, 6, 7, 9, 12, 15*** | ***8*** |
| ***5t1 (M2)*** | ***0, 3, 4, 7, 8, 11, 12, 15*** | ***8*** |
| ***6t0 (M3)*** | ***4, 5, 6, 7, 8, 9, 10, 11, 15*** | ***9*** |
| ***6t1 (M4)*** | ***0, 1, 2, 3, 7, 12, 13, 14, 15*** | ***9*** |
| ***7t0 (M5)*** | ***1, 2, 4, 7, 8, 11, 13, 14*** | ***8*** |
| ***7t1 (M6)*** | ***0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15*** | ***16*** |
| ***8t0 (M7)*** | ***7, 15*** | ***2*** |
| ***8t1 (M8)*** | ***0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15*** | ***16*** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***test*** | ***A*** | ***B*** | ***C*** | ***D*** | ***O*** | ***5*** | ***6*** | ***7*** | ***8*** |
| ***T0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***M2*** | ***M4*** | ***M6*** | ***M8*** |
| ***T1*** | ***0*** | ***0*** | ***0*** | ***1*** | ***1*** | ***M1*** | ***M4*** | ***M5, M6*** | ***M8*** |
| ***T2*** | ***0*** | ***0*** | ***1*** | ***0*** | ***1*** | ***M1*** | ***M4*** | ***M5, M6*** | ***M8*** |
| ***T3*** | ***0*** | ***0*** | ***1*** | ***1*** | ***0*** | ***M2*** | ***M4*** | ***M6*** | ***M8*** |
| ***T4*** | ***0*** | ***1*** | ***0*** | ***0*** | ***1*** | ***M2*** | ***M3*** | ***M5, M6*** | ***M8*** |
| ***T5*** | ***0*** | ***1*** | ***0*** | ***1*** | ***0*** | ***M1*** | ***M3*** | ***M6*** | ***M8*** |
| ***T6*** | ***0*** | ***1*** | ***1*** | ***0*** | ***0*** | ***M1*** | ***M3*** | ***M6*** | ***M8*** |
| ***T7*** | ***0*** | ***1*** | ***1*** | ***1*** | ***1*** | ***M1, M2*** | ***M3, M4*** | ***M5, M6*** | ***M7, M8*** |
| ***T8*** | ***1*** | ***0*** | ***0*** | ***0*** | ***1*** | ***M2*** | ***M3*** | ***M5, M6*** | ***M8*** |
| ***T9*** | ***1*** | ***0*** | ***0*** | ***1*** | ***0*** | ***M1*** | ***M3*** | ***M6*** | ***M8*** |
| ***T10*** | ***1*** | ***0*** | ***1*** | ***0*** | ***0*** | ***-*** | ***M3*** | ***M6*** | ***M8*** |
| ***T11*** | ***1*** | ***0*** | ***1*** | ***1*** | ***1*** | ***M2*** | ***M3*** | ***M5, M6*** | ***M8*** |
| ***T12*** | ***1*** | ***1*** | ***0*** | ***0*** | ***0*** | ***M1, M2*** | ***M4*** | ***M6*** | ***M8*** |
| ***T13*** | ***1*** | ***1*** | ***0*** | ***1*** | ***1*** | ***-*** | ***M4*** | ***M5, M6*** | ***M8*** |
| ***T14*** | ***1*** | ***1*** | ***1*** | ***0*** | ***1*** | ***-*** | ***M4*** | ***M5, M6*** | ***M8*** |
| ***T15*** | ***1*** | ***1*** | ***1*** | ***1*** | ***0*** | ***M1, M2*** | ***M3, M4*** | ***M6*** | ***M7, M8*** |

*M0, M1, M2, M3, M4, M5, M6, M7, M8*

*T0*

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*+*

*M0, M1, M3, M5, M7*

*T15*

*-*

*+*

*M2, M4, M6, M8*

*M1, M3, M7*

*T5*

*M1 M3*

*M7*

*M0, M5*

*T2*

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*+*

*M0*

*M5*

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*+*

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*+*

*M3*

*M1*

*T1*

*-*

*+*

*T5*

*M6, M8*

*M2, M4*

*-*

*+*

*M2*

*M4*

*T4*