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| **北 京 邮 电 大 学**  **实 验 报 告**  **课程名称\_\_\_数字逻辑与数字系统实验\_\_\_\_\_\_\_\_\_\_\_\_\_**  **实验名称\_\_\_简单时序电路\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **\_\_XXXX\_\_\_\_学院\_\_\_X\_\_\_班 姓名\_\_XXX\_\_\_\_**  **教师\_\_XXX\_\_\_\_\_\_ 成绩\_\_\_\_\_\_**  **\_202X\_\_\_年\_XX\_\_\_月\_XX\_\_\_日** |

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| **任务一：D触发器四位二进制模十六的状态转移表，并画出波形图**   1. 二进制计数器的状态转移表  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Q0 | Q1 | Q2 | Q3 | Q0\* | Q1\* | Q2\* | Q3\* | Y | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |   表1 二进制模十六计数器的状态转移表   1. Q3Q2Q1Q0的波形图   图1 二进制模十六计数器输出的波形图  **任务二：辨析二进制计数器的输出的非是否构成计数器**  答：画出该计数器的状态转移表可知：该计数器有十六种状态，所以可以用作模十六的计数器，同时输出的变量在自然二进制数的编码下时递减的。  **任务三：写出实验三（四位二进制模10）用单次脉冲做计数脉冲的状态转移表并画出波形图。**   1. 四位二进制模10的状态转移表  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Q0 | Q1 | Q2 | Q3 | Q0\* | Q1\* | Q2\* | Q3\* | Y | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |   表2 四位二进制模10计数器的状态转移表   1. Q3Q2Q1Q0的波形图     图3 十进制计数器的输出波形图 |