This is a **open** book/note quiz.

**NO** texting a friend, phoning a friend, talking to a class mate, or such is allowed.

(10 points) Construct the state graph for a sequential circuit that accepts a single input X producing an output Z that is 1 when the last 3 inputs on X have been 1-1-1. After Z is output as a 1, the circuit resets to the reset state. A sample input/output stream is shown below.

 INPUT X 0 0 0 0 1 1 0 0 1 0 0 1 1 1 1 1 0 0 0 1 1 1 1 1 1 0 1 1 1 0 0 0

 OUTPUT Z 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0 1 0 0 0 1 0 0 0

**Mealy Machine**

|  |  |
| --- | --- |
| **State** | **Meaning** |
| A | Reset – string of 0’s |
| B | 1st 1 received |
| C | 2nd 1 received |

