**COE 428 QUIZ 5**

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**STUDENT NUMBER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. What is a State diagram?
2. A flow chart used by a robot to perform actions
3. A series of bubbles and arrows that get displayed on a PC screen automatically when a program runs
4. A flow chart in which the flow of a program is shown using arrows between different states represented by circles
5. All of the above.
6. **State diagrams** are the only way of effectively representing **state machines**
7. False
8. True
9. It depends on the state machine type.
10. None of the above.
11. Which of the following statements is true about **state machines** in general?
12. **State machine must have a final pseudo-state.**
13. **A state machine must have at least one initial pseudo-state.**
14. **A state machine may have at most one initial and one final pseudo-state.**
15. **None of the above.**
16. A circuit design requires **fifteen** states. How many Flip Flops will be required for its implementation?
17. 15
18. 4
19. 3
20. 5
21. A Finite State machine is implements with **3 flip flops**. What is the maximum number of states it can have

a. 8  
b. 3  
c. 2  
d. 4

1. Which one is true about the **Mealy and Moore** machine?
2. Mealy machine has clock while the Moore Machine does not has a clock input.
3. In Mealy machine the Output depends upon the State only.
4. In Moore Machine the Output is dependent upon the State of the machine as well as the present input.
5. None of the above
6. Considering the advantages and disadvantages of Mealy Machine and Moore Machines. Which of the following is **true**?
7. The Mealy Machine requires fewer states than the Moore Machine.
8. Mealy machine may pass the glitches present in the input to the output.
9. Mealy and Moore Machines are always same in synthesis. The difference is only for theoretical presentation.
10. None of the above.
11. The transition from one state to another is triggered by an event. One type of trigger is a change trigger. Which of the following statements is true?
    1. A change trigger occurs when a condition becomes true.
    2. A change trigger occurs when a condition changes.
    3. A change trigger occurs when an attribute value changes in an object.
    4. None of the above.
12. A **Black State** for a Finite State Machine is defined as
    1. Any non-accepting state which does not have an arrow directing to another state, but does allow for input-looping on itself.
    2. Undefined state of an FSM.
    3. Toggle state for an FSM
    4. None of the above.
13. The state machine used for **COE 428 lab 5** is a
    1. Deterministic Finite State Machine.
    2. Non Deterministic Finite State Machine.
    3. Both of the above.
    4. None of the above.