SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF MECHATRONICS ENGINEERING

19MCT201 - DESIGN OF DIGITAL CIRCUITS

II YEAR - III SEM

UNIT 4 – DESIGN OF SEQUENTIAL CIRCUITS

TOPIC 3– Classification of Seq. Circuits

Classification of sequential circuits

In synchronous or clocked sequential networks, clocked flip-flops are used as memory elements, which change their individual states in synchronism with the periodic clock signal. Therefore, the change in states of flip-flops and change in state of the entire circuit occurs at the transition of the clock signal.

The synchronous or clocked sequential networks are represented by two models.

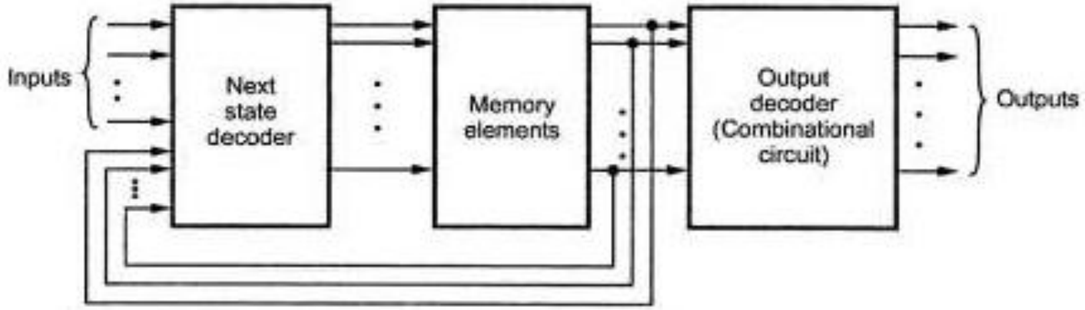
- **Moore model :** The output depends only on the present state of the flip-flops.
- **Mealy model :** The output depends on both the present state of the flip-flop(s) and on the input(s).

Moore Vs Mealy Circuit Models

	Moore Model	Mealy Model
a)	Its output is a function of present state only.	Its output is a function of present state as well as present input.
b)	Input changes does not affect the output.	Input changes may affect the output of the circuit.
c)	Moore model requires more number of states for implementing same function.	It requires less number of states for implementing same function.

Moore and Mealy

(a) Moore model



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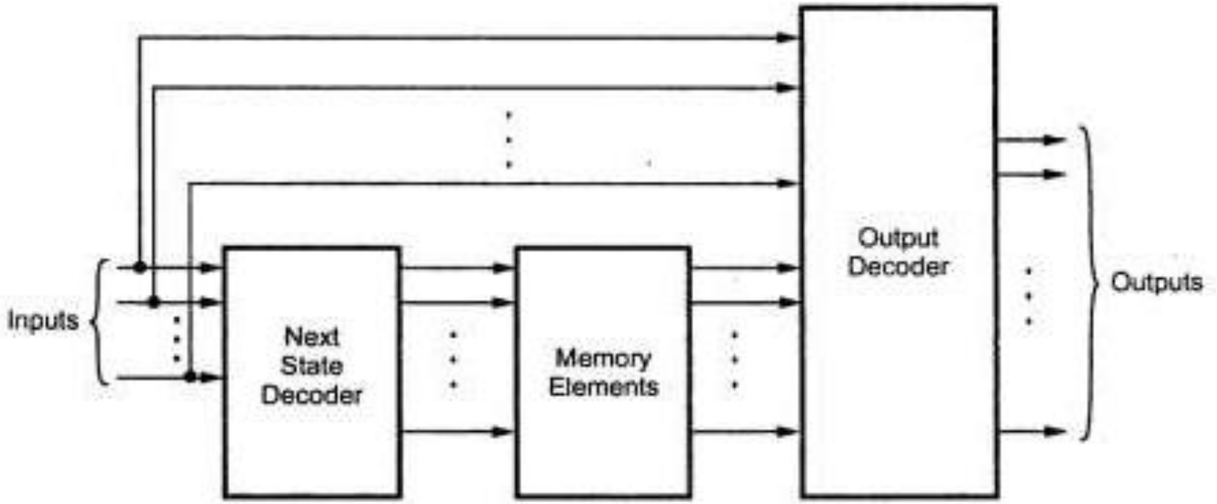

Fig. Mealy circuit model

ASSESSMENT - 1

Mux relates with us….

Question 1

Which combinational circuit is renowned for selecting a single input from multiple inputs & directing the binary information to output line?

- a) Data Selector
- b) Data distributor
- c) Both data selector and data distributor
- d) DeMultiplexer

Question 2

Which is the major functioning responsibility of the multiplexing combinational circuit?

- a) Decoding the binary information
- b) Generation of all minterms in an output function with OR-gate
- c) Generation of selected path between multiple sources and a single destination
- d) Encoding of binary information

References

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