

# 20 Lecture - CS402

## Important Mcqs

### 1. What is a Finite Automaton with Output (FAO)?

- a. A computational model that can recognize a language
- b. A computational model that can produce output in response to inputs
- c. A computational model that can perform mathematical computations

Answer: b

### What is the purpose of an FAO?

- a. To recognize or generate a language
- b. To perform mathematical computations
- c. To simulate logic circuits

Answer: a

### What is the difference between an FA and an FAO?

- a. An FA can produce output, while an FAO cannot
- b. An FA cannot produce output, while an FAO can
- c. An FA and an FAO are the same thing

Answer: b

### Can an FAO recognize a language that cannot be recognized by an FA?

- a. Yes
- b. No
- c. It depends on the specific language and FAO.

Answer: c

### How does an FAO produce output?

- a. By changing its state
- b. By accepting or rejecting an input string
- c. By emitting output symbols in response to input symbols

Answer: c

### What is the role of an FAO's output in decoding error-correcting codes?

- a. To correct errors in the input code
- b. To verify the correctness of the input code
- c. To provide information about the errors in the input code

Answer: c

### What is the computational power of an FAO compared to a Turing machine?

- a. More powerful
- b. Less powerful
- c. Equivalent

Answer: b

### Can an FAO simulate a logic circuit?

- a. Yes

b. No

c. It depends on the specific logic circuit and FAO.

**Answer: a**

**What is the minimum number of states required for an FAO to recognize a regular language?**

a. 1

b. 2

c. 3

**Answer: b**

**Which of the following is not a typical application of an FAO?**

a. Recognizing or generating a language

b. Decoding error-correcting codes

c. Solving mathematical equations

**Answer: c**