🔷 Basic MCQs

1.Finite Automata is used to recognize:

A) Context-free languages

B) Regular languages ✅

C) Recursive languages

D) All languages

2.A Finite Automaton has:

A) Infinite memory

B) No memory

C) Finite number of states ✅

D) Stack

3.The initial state of FA is represented by:

A) δ

B) q_0 ✅

C) Σ

D) F

4.The set of final states is denoted by:

A) Q

B) Σ

C) F ✅

D) δ

5.DFA stands for:
A) Deterministic Functional Automata
B) Deterministic Finite Automata ✅
C) Defined Finite Automata
D) Direct Finite Automata
6.In DFA, for each input symbol:
A) Multiple transitions possible
B) No transition
C) Exactly one transition ✅
D) Infinite transitions
7.NFA allows:
A) Only one transition
B) No transition
C) Multiple transitions for same input ✅
D) Only final transitions
8.ε-transition is allowed in:
A) DFA
B) NFA ✅
C) Both
D) None
9.Transition function of DFA is:

A) δ: Q × Σ → 2^Q
B) δ: Q × Σ → Q ✅
C) δ: Σ → Q
D) δ: Q → Σ
10.Transition function of NFA is:
A) δ: Q × Σ → Q
B) δ: Q × Σ → 2^Q ✅
C) δ: Σ → Q
D) δ: Q → Σ
10.Finite Automata is widely used in:
A) Operating systems
B) Compiler design ✅
C) Database management
D) Networking
11.A DFA accepts a string if:
A) It reaches initial state
B) It reaches final state ✅
C) It loops
D) It stops anywhere
12.Which of the following has more power?
A) DFA

B) NFA
C) Both are equal ✅
D) None
13.NFA can be converted to:
A) PDA
B) DFA ✅
C) TM
D) Grammar
14.Number of states in FA is:
A) Infinite
B) Finite ✅
C) Unlimited
D) Zero
15.Which automaton uses a stack?
A) DFA
B) NFA
C) PDA ✅
D) FA
16.Regular languages are accepted by:
A) PDA
B) FA ✅

C) TM
D) Grammar
17.Which one is NOT a component of FA?
A) Q
B) Σ
C) Stack ✅
D) δ
18.DFA cannot have:
A) States
B) Transitions
C) ε-moves ✅
D) Input symbols
19.If no transition exists in DFA for an input:
A) It crashes
B) Goes to dead state ✅
C) Stops
D) Accepts