

RGPV 2015 PYQ

Q. State and explain the properties of transition functions ?

Ans. A transition function is defined on every state for every input symbol.

Transition Function (δ) is defined as $\delta = Q \times \Sigma \rightarrow Q$.

Where,

Q is set of all states.

Σ is set of input symbols.

Properties of transition functions:

Property 1: $\delta(q, \Lambda) = q$. It means the state of a system can be changed by an input symbol.

Property 2: For all strings w and input symbol a ,

$$\delta(q, aw) = \delta(\delta(q, a), w)$$

$$\delta(q, wa) = \delta(\delta(q, w), a)$$

It means the state after the automaton consumes or reads the first symbol of a string aw and the state after the automaton consumes a prefix of the string wa .

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