## 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 ( $\delta$ ) is defined as $\delta=\mathrm{Q} \times \Sigma->\mathrm{Q}$.

Where,
Q is set of all states.
$\Sigma$ 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,
$\delta(q, a w)=\delta(\delta(q, a), w)$
$\delta(q, w a)=\delta(\delta(q, w), a)$
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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