



Basic Quantum Mechanics for Quantum Computing

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	Classical Computing	Quantum Computing
Unit of Information	<i>Bit</i>	<i>Quantum Bit (Qubit)</i>
Information Representation	<i>Bit String (Binary String)</i>	<i>Quantum State (Multi-Qubits)</i>
Information Storage	<i>Classical Two-State System</i>	<i>Quantum Two-State System</i>



Bit & Qubit with Two Possible (Observable) Values

	Possible (Observable) Value 1	Possible (Observable) Value 2
Bit	A	B
Qubit	$ A\rangle$ - "ket A"	$ B\rangle$ - "ket B"



Bit & Qubit with Two Possible (Observable) Values

	Possible (Observable) Value 1	Possible (Observable) Value 2
Bit	0	1
Qubit	$ 0\rangle$ - "ket 0"	$ 1\rangle$ - "ket 1"

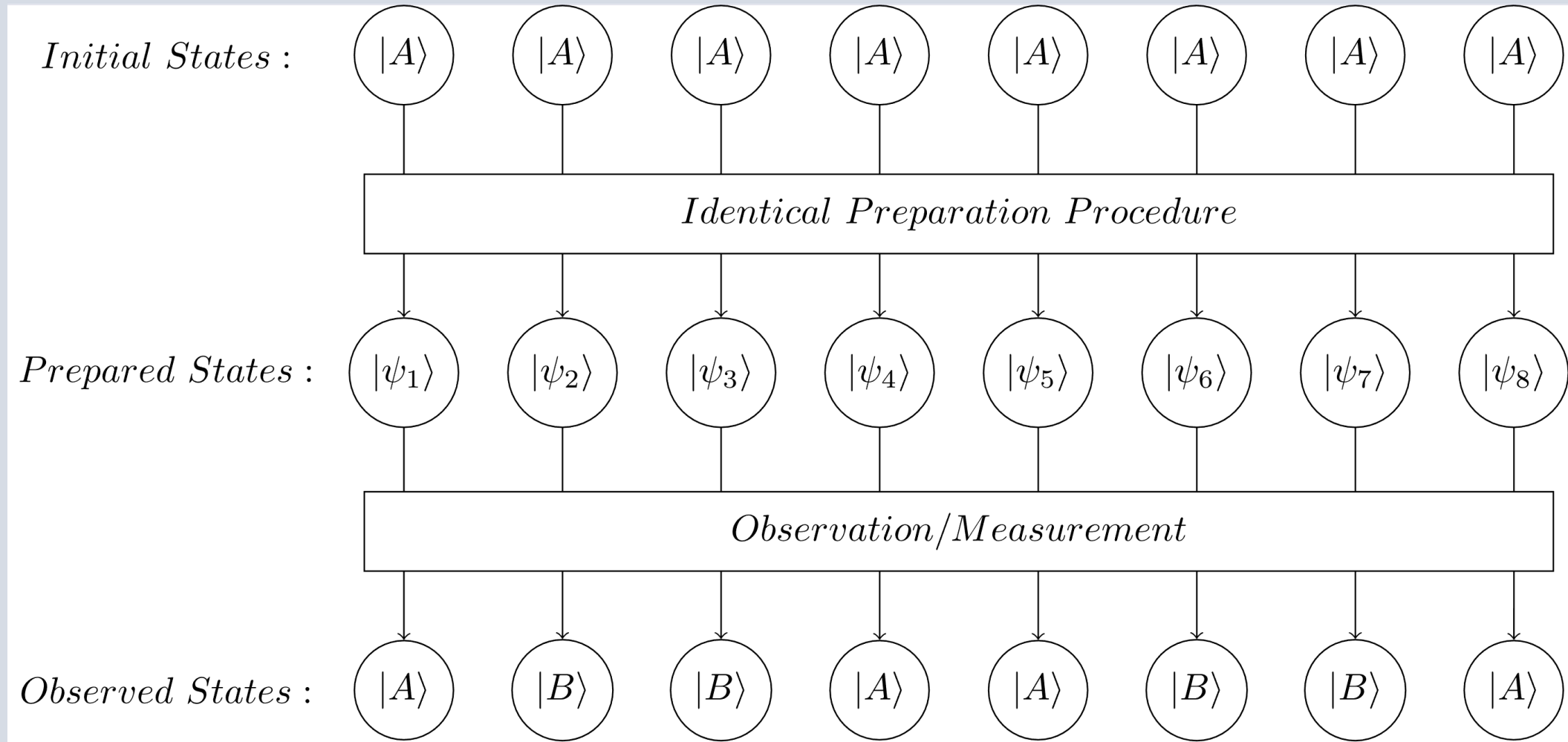


Two-State Systems: Classical and Quantum

	Observable State 1	Observable State 2
Classical System	State A	State B
Quantum System	State $ A\rangle$ - "ket A"	State $ B\rangle$ - "ket B"



Eight Quantum Two-Level Systems: An Experiment



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