MOLECULAR ASPECTS OF GENERAL ANAESTHESIA

Essay
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of M.Sc. Degree in Anaesthesia

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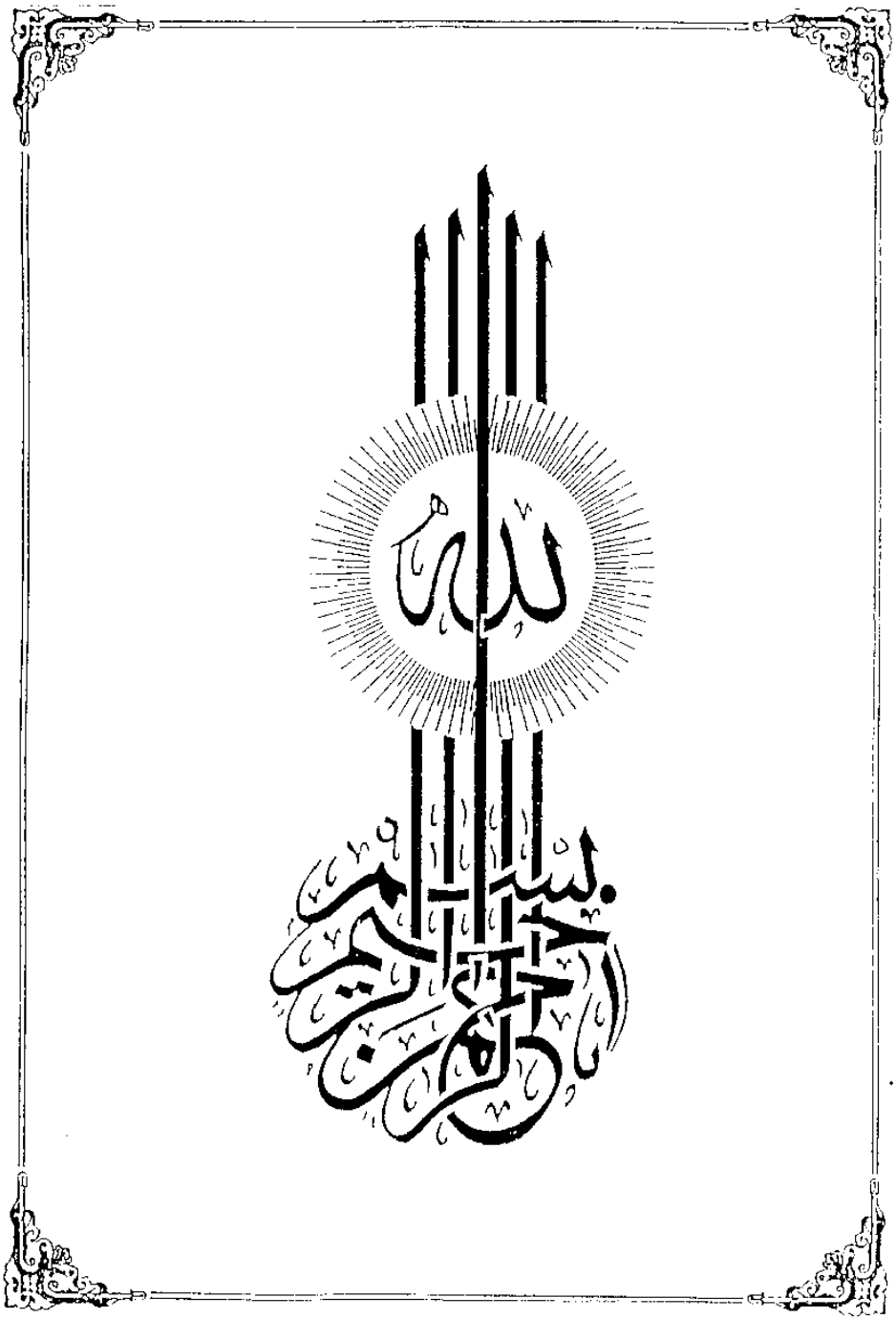

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The term anaesthesia can be described in practical terms as the condition of a patient corresponding to the one produced by diethyl-ether which permits surgery to be performed without the patient removing, reacting to pain, or remembering the surgical intervention after recovery from anaesthesia ***(Urban, 1992)***.

The action of an anaesthetic at a particular molecular site will depend on how this molecular site is integrated into the function of the CNS ***(Urban, 1992)***.

The anaesthetic effect on a particular membrane protein (e.g., a sodium channel) is the result of several and simultaneous actions at presumably distinct sites of the sodium channel macromolecule. The total anaesthetic response of a neuron again results from the summation of the responses of its different ion channels and ion pumps to the anaesthetic and the various inputs it receives from neurones of surrounding network ***(Urban, 1993)***.

While the molecular basis of the action of most anaesthetic agents is unknown, it is a commonly held view that general anaesthetic drugs have a more pronounced effect on synaptic mechanisms in the CNS than on the propagation of electrical signals along axons ***(Larrabee et al., 1952)***.

Anatomy of the Cell Membrane