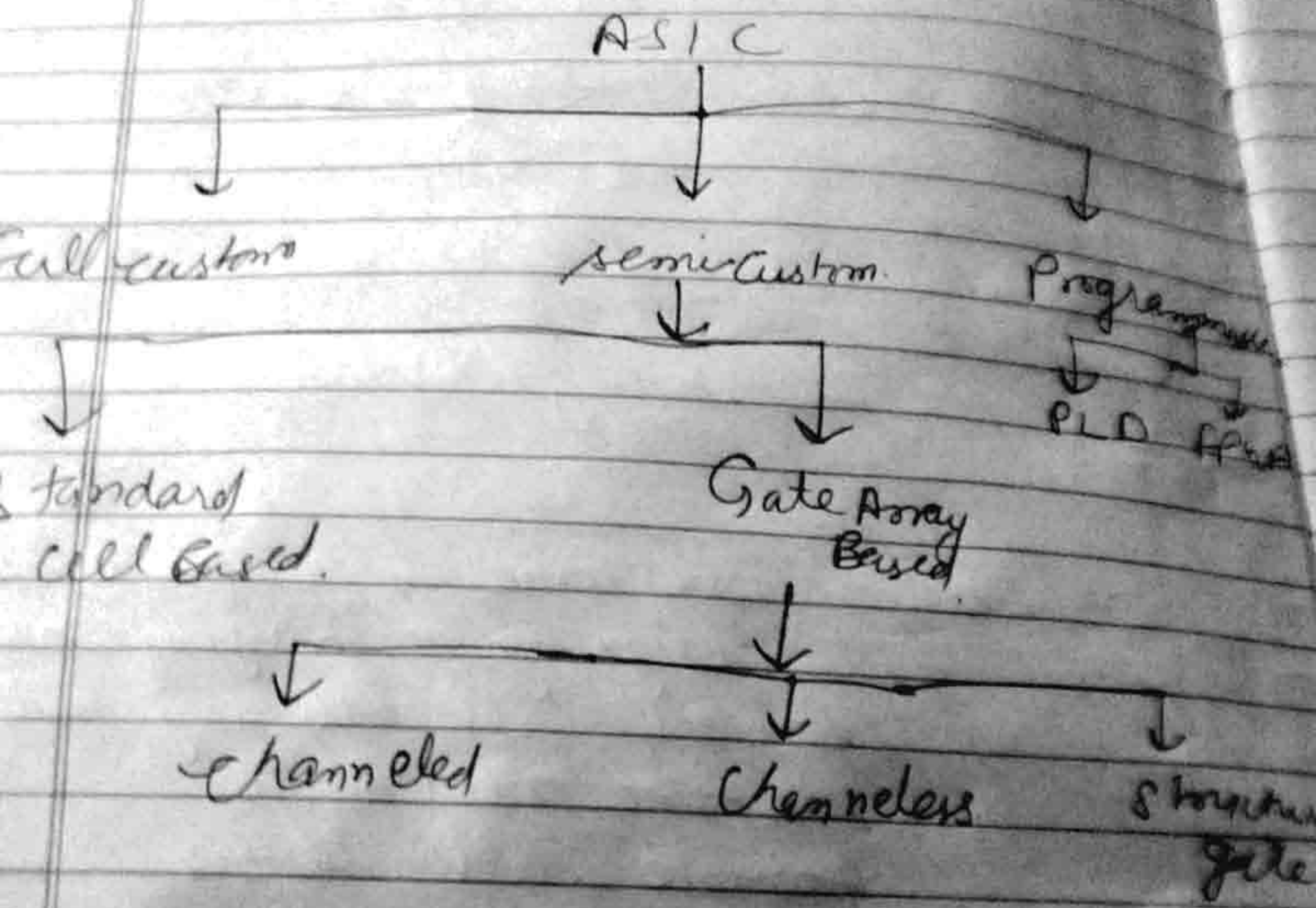


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Subject - A.D.V
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Types of ASIC



(2)

Full custom: A full custom is one includes some logic cells that are customized and all mask layers that are customized

A microprocessor is an example of a full custom IC. Designers spend many hours squeezing the most out of every last square micron of microprocessor chip space by hand.

customizing all of the IC feature in this way allows designers to include analog circuits optimized memory cells or mechanical structures on an IC, for example. Full custom IC are the most expensive to manufacture and to design.

Semicustom ASIC

ASIC for which all of the logic cells are pre-designed and some (possibly all) of the mask layers are customized are called semi custom.

* Using the pre-designed cells from a cell library makes the design much easier.

* There are two types of semi custom ASIC

① Standard - cell - based ASIC

② Gate Array Based ASIC.

Standard cell based ASIC

use pre-designed logic cells (AND gate, OR gates, multiplexers, and flip flops for example) known as standard cells.

One can apply the term CBIC to an IC that uses cells, but it is generally accepted that a cell based ASIC.

Disadvantages : are time or expense of
designing or buying the
standard cell library and
the time needed to
fabricate all layers
of the ASIC for
each new design