CS302 shortnotes

Digital Logic and Design (Virtual University of Pakistan)

Question: How can a D flip-flop can be made to toggle?

Answer: A D flip-flop can be made to toggle by connecting Q' to D.

Question: What is the difference between a counter and shift register ?

Answer: A counter has a specified sequence of states, but a shift register does not.

Question: How many outputs and inputs GAL22V10 have?

Answer: The GAL22V10 has 22 inputs and 10 outputs.

Question: What is an equivalent representation for the Boolean expression A' + 1 ?

Answer: From the Boolean property A + 1 = 1, let A = A'.

Question: What is K-map and why we used it?

Answer: A Karnaugh map provides a pictorial method of grouping together expressions with common factors and therefore eliminating unwanted variables. The Karnaugh map can also be described as a special arrangement of a truth

table.

Question: Each stage in a shift register represents how much storage capacity?

Answer: one bit

Question: what are PLD's?How are the classified.

Answer: The programmable logic devices (PLD's) are used in a lot of applications, and replace SSI and MSI circuits, due the space saving and reduce the number of devices in a certain design. A PLD is made of a matrix of AND and OR gates, that can be programmed to obtain certain logic functions. There are four types of devices that can be clasified as PLD's: a)The Programmable Read-Only Memory, PROM. b)The Programmable Logic Array , PLA. c)The Programmable Array Logic, PAL. d)The Generic Array Logic, GAL.

Question: What are Flip-flops?

Answer: The memory elements in a sequential circuit are called flip-flops. A flip-flop circuit has two outputs, one for the normal value and one for the complement value of the stored bit.

Question: If an S-R latch has a 0 on the S input and a 1 on the R input and then the R input goes to 0, then what the latch

will be?

Answer: The latch wil be in reset condition.

Question: In a 4-bit Johnson counter sequence there are a total of how many states, or bit patterns?

Answer: 8