Digital Electronics Interview Questions with Solutions:

Part 1: Digital Electronics Interview Questions (Basic):

Fresher candidates must go through these below given Digital Electronics Interview Questions that will help you to clear the Digital Electronics Questions with Answers PDF for Interview.

Ques1: What is the difference between D-latch And D Flip-flop?

Ans: D-latch is level sensitive where as a flip-flop is edge sensitive. Flip-flops are made up of latches.

Ques2: What Is A Multiplexer?

Ans: Is a combinational circuit that selects binary information from one of many input lines and directs it to a single output line. (2n =>n), where n is selection line.

Ques3: How Can You Convert The Jk Flip-flop To A D Flip-flop?

Ans: By connecting the J input to the K through the inverter.

Ques4: How Do You Detect If Two 8-bit Signals Are Same?

Ans: XOR each bits of A with B (for e.g. A [0] xor B [0]) and so on. The o/p of 8 XOR gates is then given as i/p to an 8-i/p nor gate. if o/p is 1 then A=B.

Part 2 – Digital Electronics Interview Questions (Advanced)

Ques5: What Is Race-around Problem? How Can You Rectify It?

Ans: The clock pulse that remains in the 1 state while both J and K are equal to 1 will cause the output to complement again and repeat complementing until the pulse goes back to 0, this is called the race around problem. To avoid this undesirable operation, the clock pulse must have a time duration that is shorter than the propagation delay time of the F-F, this is restrictive so the alternative is master-slave or edge-triggered construction.

Ques6: How Will You Implement A Full Subtractor From A Full Adder?

Ans: All the bits of subtrahend should be connected to the xor gate. Other input to the xor being one. The input carry bit to the full adder should be made 1. Then the full adder works like a full subtract.

Ques7: In A 3-bit Johnson’s Counter What Are The Unused States?

Ans: 2(power n)-2n is the one used to find the unused states in Johnson counter. So for a 3-bit counter it is 8-6=2.Unused states=2. the two unused states are 010 and 101.

Ques8: What Is Difference Between Ram And Fifo?
Ans: FIFO does not have address lines. Ram is used for storage purpose while as FIFO is used for synchronization purpose i.e. when two peripherals are working in different clock domains then we will go for FIFO.

Ques9: Is It Possible To Reduce Clock Skew To Zero? Explain Your Answer?

Ans: Even though there are clock layout strategies (H-tree) that can in theory reduce clock skew to zero by having the same path length from each flip-flop from the pll, process variations in R and C across the chip will cause clock skew as well as a pure H-Tree scheme is not practical (consumes too much area).

Ques10: How many types of number system are there?

Ans: There are four types of number system:

- Decimal Number System.
- Binary Number System.
- Octal Number System.
- Hexadecimal Number System.

**Digital Electronics Interview Questions (Basic / Advanced)**

Ques11: What is a Logic gate?

Ans: The basic gates that make up the digital system are called a logic gate. The circuit that can operate on many binary inputs to perform a particular logic function is called an electronic circuit.

Ques12: What is meant by K-Map or Karnaugh Map?

Ans: K-Map is a pictorial representation of truth table in which the map is made up of cells, and each term in this represents the min term or max term of the function. By this method, we can directly minimize the Boolean function without following various steps.

Ques13: Name the two forms of Boolean expression?

Ans: The two forms of Boolean expression are:

- Sum of products (SOP) form.
- The Product of sum (POS) form.

Ques14: What are the limitations of the Karnaugh Map?

Ans: The limitations of Karnaugh Map are as follows:

- It is limited to six variable maps which means more than six variable involving expressions are not reduced.
- These are useful for only simplifying Boolean expression which is represented I standard form.

Ques15: What are the applications of Multiplexer (MUX)?
Ans: The applications of the multiplexer are as follows:

- It is used as a data selector from many inputs to get one output.
- It is used as A/D to D/A Converter.
- These are used in the data acquisition system.
- These are used in time multiplexing system.

Ques16: What is Electronic?

Ans: The study and use of electrical devices that operate by controlling the flow of electrons or other electrically charged particles

Ques17: What is sampling?

Ans: The process of obtaining a set of samples from a continuous function of time x(t) is referred to as sampling.

Ques18: Why is Digital Electronics important?

Ans:

- All real life signals are analog in nature and at first sight; it seems use of analog is much better as compared to digital signal.
- Digital signal is used in communication process to minimize the effect of noise.

Ques19: Who invented digital electronics?

Ans: The Z3 was an electromechanical computer designed by Konrad Zuse.

Ques20: What are digital techniques?

Ans:

- Digital electronics or digital (electronic) circuits are electronics that operate on digital signals
- Digital techniques are helpful because it is a lot easier to get an electronic device