Digital Circuits Questions and Answers – Programmable Array Logic

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This set of Digital Electronics/Circuits Multiple Choice Questions & Answers (MCQs) focuses on "Programmable Array Logic".

1. The inputs in the PLD is given through _____
a) NAND gates
b) OR gates
c) NOR gates
d) AND gates

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Answer: d
Explanation: The inputs in the PLD is given through AND gate followed by inverting & non-inverting buffer. PLDs are Programmable Logic Devices consisting of logic gates, flip-flops and registers connected together on a single chip. Thus, it can be categorised into PROM, PAL a PLA

2. PAL refers to _____
a) Programmable Array Loaded
b) Programmable Logic Array
c) Programmable Array Logic
d) Programmable AND Logic

View Answer

Answer: c
Explanation: PAL refers to Programmable Array Logic consisting of programmable AND gates and fixed OR gates.

3. Outputs of the AND gate in PLD is known as _____
a) Input lines
b) Output lines
c) Strobe lines
d) Control lines

View Answer

Answer: b
Explanation: Outputs of the AND gate in PLD is known as output lines.

4. PLA contains _____
a) AND and OR arrays
b) NAND and OR arrays

Answer: a
Explanation: Programmable Logic Array is a type of fixed architecture logic devices with programmable AND gates followed by programmable OR gates. It is a kind of PLD.

5. PLA is used to implement _____
a) A complex sequential circuit
b) A simple sequential circuit
c) A complex combinational circuit
d) A simple combinational circuit

View Answer

Answer: c
Explanation: Since, PLA is the combination of programmable AND and OR gates. So, it is used to implement complex combinational circuit.

6. A PLA is similar to a ROM in concept except that _____
a) It hasn’t capability to read only
b) It hasn’t capability to read or write operation
c) It doesn’t provide full decoding to the variables
d) It hasn’t capability to write only

View Answer

type of fixed architecture logic devices with programmable AND gates followed by programmable OR gates. It is a kind of PLD.

7. For programmable logic functions, which type of PLD should be used?
a) PLA
b) PAL
c) CPLD
d) SLD

View Answer

Answer: b
Explanation: Since PAL consists of programmable AND gates and fixed OR gates and also circuitry working is less.

8. The complex programmable logic device contains several PLD blocks and _____
a) A language compiler
b) AND/OR arrays
c) Global interconnection matrix
d) Field-programmable switches

View Answer

Answer: c
Explanation: The complex programmable logic device contains several PLD blocks and a global interconnection matrix by which it communicates through several devices. It is also known as Field-Programmable Gate Arrays (FPGAs).

9. Which type of device FPGA are?
a) SLD
b) SROM
c) EPROM
d) PLD

View Answer

Answer: d
Explanation: Field-Programmable Gate Arrays (FPGAs) are reprogrammable silicon chips. In contrast to processors that you find in your PC, programming an FPGA rewires the chip itself to implement your functionality rather than run a software application. Thus, FPGAs are P

10. The difference between a PAL & a PLA is _____
a) PALs and PLAs are the same thing
b) The PLA has a programmable OR plane and a programmable AND plane, while the PAL only has a programmable AND plane
c) The PAL has a programmable OR plane and a programmable AND plane, while the PLA only has a programmable AND plane
d) The PAL has more possible product terms than the PLA

View Answer

Answer: b
Explanation: The main difference between a PAL & PLA is that PLA has a programmable OR plane and a programmable AND plane, while the PAL only has a programmable AND plane and a fixed OR plane.

11. If a PAL has been programmed once _____
a) Its logic capacity is lost
b) Its outputs are only active HIGH
c) Its outputs are only active LOW
d) It cannot be reprogrammed

View Answer

Answer: d
Explanation: PAL only has a programmable AND plane and a fixed OR plane. Since, PAL is dynar
in nature. So, it can't be reprogrammed.

b) Field Programmable Gate Array
c) First Program Gate Array
d) Field Program Gate Array

View Answer

Answer: b
Explanation: The FPGA refers to Field Programmable Gate Array. Field-Programmable Gate Arrays (FPGAs) are reprogrammable silicon chips. In contrast to processors that you find in your PC, programming an FPGA rewires the chip itself to implement your functionality rather than run a software application. Thus, FPGAs are PLD devices.

13. The full form of VLSI is _____
a) Very Long Single Integration
b) Very Least Scale Integration
c) Very Large Scale Integration
d) Very Long Scale Integration

View Answer

Answer: c
Explanation: The full form of VLSI is Very Large Scale Integration in which FPGA is implemented.

14. In FPGA, vertical and horizontal directions are separated by

d) A flip-flop

View Answer

Answer: b
Explanation: The FPGA refers to Field Programmable Gate Array. Field-Programmable Gate Arrays (FPGAs) are reprogrammable silicon chips. Vertical and horizontal directions is separated by a channel in an FPGA which determines the location of the output.

15. Applications of PLAs are _____
a) Registered PALs
b) Configurable PALs
c) PAL programming
d) All of the Mentioned

View Answer

Answer: d
Explanation: Applications of PLAs are as mentioned above and these are performed by using an extra flip-flop with PAL.

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