

VLSI DESIGN [ECE 7th sem, Regular/Backlog]

Batch 2017/2016

Course Code: ECE 7117B

Date: 09/06/2021

Start of time: 9:30 a.m.

End of time: 10:10 a.m.

Link will be closed exactly at 10:10 a.m. failing which submission will not be possible.

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Batch *

2015

Select Campus *

SSM College ▼

Choose the most appropriate answer for the question given below

Charge sharing problem in certain CMOS families leads to *

1 point

- Higher Speed
- Higher Power dissipation
- Both A and B are correct
- None of the above

Choose the most appropriate answer for the question given below

For Triode region of a MOS device, the I/V characteristics are similar to a _____ *

1 point

- Linear Capacitor.
- Linear Resistor.
- Non-linear Capacitor.
- Non-linear Resistor.

Choose the most appropriate answer for the question given below

Considering I/V characteristics of a nMOS device in saturation region, as V_{ds} increases value of Drain current (I_{ds}) _____ * 2 points

- Remains Constant
- Decreases Exponentially
- Decreases linearly
- Increases exponentially

Choose the most appropriate answer for the question given below

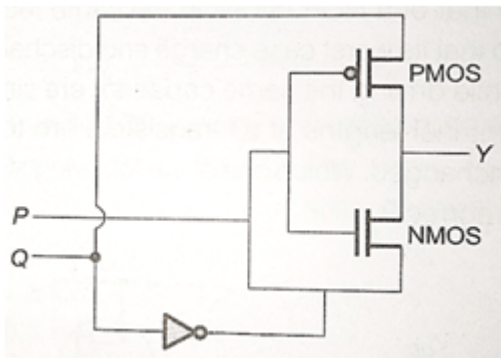
Electron Beam Lithography is a technique used for * 2 points

- Layout generation
- Masking
- Pattern formation
- None of above

Choose the most appropriate answer for the question given below

For the circuit given below P and Q are the inputs and Y is the output. The logic implemented by the circuit is *

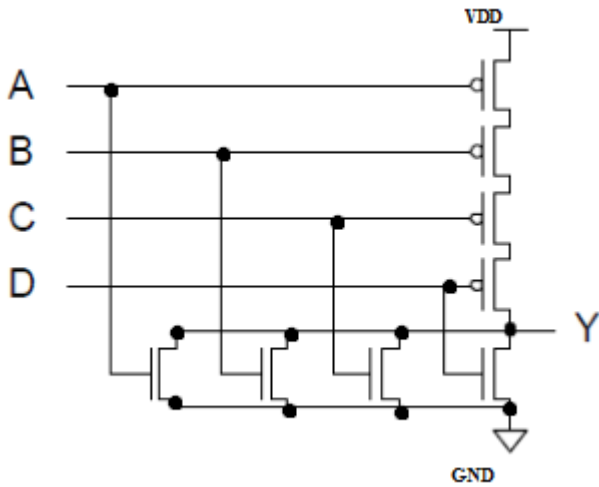
2 points



- XNOR
- XOR
- NOR
- OR

Choose the most appropriate answer for the question given below

For the circuit shown below, ABCD are inputs to generate a boolean function Y, then Y is 2 points
 = *



- A+B. NOT(C+D)
- (A.B+C.D)
- (c) A+B+C+D
- (d) NOT(A+B+C+D)

Choose the most appropriate answer for the question given below

For an nMOS to operate under saturation condition value of drain to source voltage should be _____ * 1 point

- $V_{ds} = V_{gs} \cdot V_{th}$
- $V_{ds} = V_{gs} - V_{th}$
- $V_{ds} = V_{gs} / V_{th}$
- $V_{ds} < V_{gs} - V_{th}$

Choose the most appropriate answer for the question given below

As the substrate voltage is increased the threshold voltage for an nMOS *

2 points

- Remains Constant
- Increases
- Decreases
- Exponentially increases

Choose the most appropriate answer for the question given below

The Dynamic Power Consumption for a CMOS circuit is a function of switching activity of the circuit *

1 point

- True
- False

Choose the most appropriate answer for the question given below

Dynamic Logic design technique uses Clock signal as one of the inputs *

1 point

- True
- False

Choose the most appropriate answer for the question given below

Stick diagram representation of a circuit gives exact information about the dimensions of each region/layer used in the layout *

2 points

- True
- False

Choose the most appropriate answer for the question given below

Epitaxy is a method used for *

2 points

- Etching out the extra materials
- Obtaining thin layers of crystalline silicon
- Addition of Impurity particles for doping
- None of the above

Choose the most appropriate answer for the question given below

The main purpose of Metallization step of VLSI fabrication is to *

2 points

- Make devices stronger internally
- Spread material for making contacts
- decrease impurities internally
- All of the above

Choose the most appropriate answer for the question given below

For λ (Lambda)-Based design rules, all device dimensions are expressed in terms of scalable parameter λ and is given as *

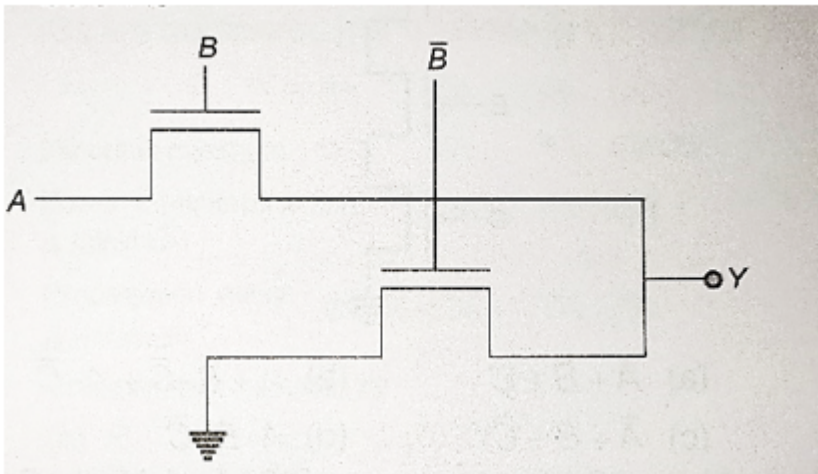
2 points

- $\lambda=L/4$
- $\lambda=L/3$
- $\lambda=L/2$
- $\lambda=L/1.5$

Choose the most appropriate answer for the question given below

The Logic Functionality (Y) realized by the circuit shown below is: *

2 points



- OR
- NAND
- AND
- XOR

Write suitable answers

Mention various steps of VLSI fabrication Technology.(Note: Do not Describe) *

3 points

sdasdasd

Write briefly about Power Dissipation for a CMOS circuit?Mention major types of power dissipation. *

asadsadasd

Briefly describe the following second order effects : a) Punch Through Effect. b) Drain Induced Barrier Lowering. *

asdada

Confirm Your Submission

I confirm that the answers submitted are correct to the best of my knowledge *



SUBMIT

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