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Unit 2 - Introduction to IC Fabrication Technology

Course outline

Introduction to IC Fabrication Technology

Introduction to IC Fabrication Technology

- Introduction to IC Fabrication
- Introduction to IC Fabrication Contd...
- Introduction to Fabrication of Sensors
- Quiz : Week 2 Assignment 2
- Assignment 2 - Solutions

Introduction to Fabrication Technolgy

Introduction to Fabrication Technolgy

Operational Amplifiers

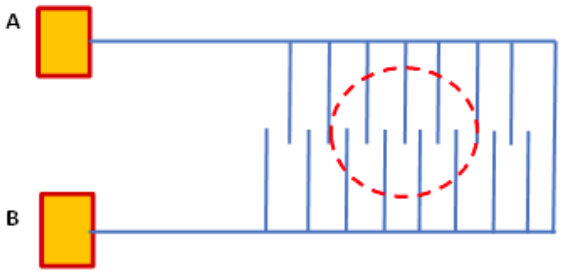
Op-Amp Applications

Week 2 Assignment 2

The due date for submitting this assignment has passed. **Due on 2018-02-07, 23:59 IST.**

Submitted assignment

1) When no tissue is placed at the dotted area, what will be the typical impedance measured across contact points A and B? ***1 point***



- ~ 1k Ω
- ~ 0 Ω
- ~ 100 Ω
- ~ ∞ Ω

No, the answer is incorrect.
Score: 0

Accepted Answers:
~ 0 Ω

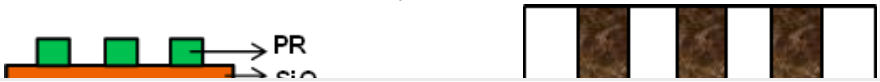
2) Name the junction of a semiconductor with a metal ***1 point***

- PIN junction
- Shockley junction
- Schottky barrier
- PN junction

No, the answer is incorrect.
Score: 0

Accepted Answers:
Schottky barrier

3) Given is a bright field mask. A Si-SiO2 (2 µm) wafer is coated with positive PR and is developed after exposure. How will be the cross-section of developed wafer look like? ***1 point***



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Op-Amp

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Experiments on Op-amp Applications

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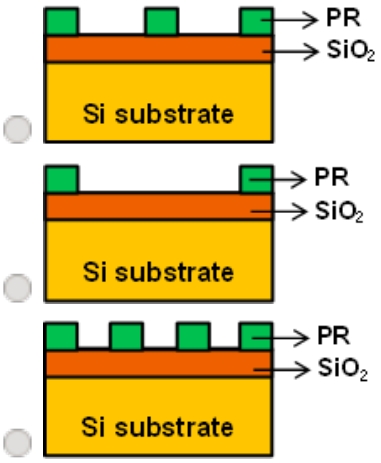
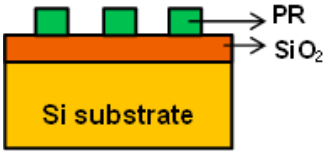


No, the answer is incorrect.
Score: 0

Accepted Answers:



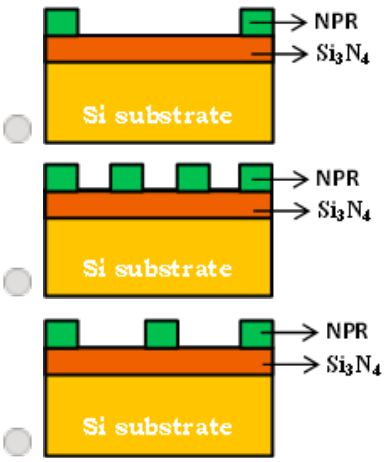
4) Prior to gold deposition on silicon wafer chromium is used for ***1 point***

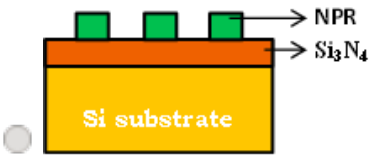
- Releasing stress between Si and Au
- Etching
- Good electrical conductivity
- Good PN junction

No, the answer is incorrect.
Score: 0

Accepted Answers:
Releasing stress between Si and Au

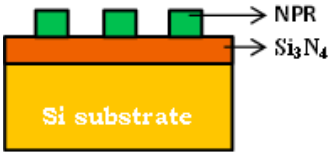
5) Given is a bright field mask and negative PR is applied. A Si wafer is coated with Si3N4 (500 nm) and is developed after exposure. How will the developed structure look like? ***1 point***





No, the answer is incorrect.
Score: 0

Accepted Answers:



6) To grow 1µm thick SiO2 layer on the Si wafer which of the process is preferable? ***1 point***

- Both dry and wet oxidation are equally preferable
- CVD
- Wet oxidation
- Dry oxidation

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wet oxidation

7) Given below are the list of components. ***1 point***

(A) Solvent (B) Resin (C) Developer (D) Photosensitive material (E) Metal nanoparticles
Which of these are the basic components of PR?

- A, B, C, D, E
- B, C, D
- A, B, D
- C, D, E

No, the answer is incorrect.
Score: 0

Accepted Answers:
A, B, D

8) To improve adhesion of photo-resist which of the following chemical is used? ***1 point***

- Poly-acrylonitile
- Polydimethylsiloxane
- Isopropyl alcohol
- Hexamethyldisilazane

No, the answer is incorrect.
Score: 0

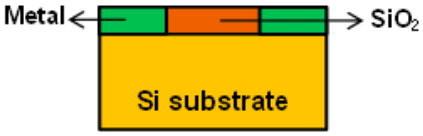
Accepted Answers:
Hexamethyldisilazane

9) Consider the following processes ***1 point***

1. Wafer cleaning
2. PR spin coating
3. PR stripping

4. Development of PR
5. Photolithography
6. Deposition of SiO2
7. Deposition of metal
8. Etching of SiO2

What is the sequence number in the process to be followed in order to obtain the results as shown in the figure?



- 1-6-5-4-2-3-7-8
- 1-6-2-7-5-4-3-8
- 1-6-2-5-4-8-3-7
- 1-6-2-5-4-3-8-7

No, the answer is incorrect.
Score: 0

Accepted Answers:
1-6-2-5-4-8-3-7

10) Which of the following can be used as developer **1 point**

- Sodium carbonate
- Sodium hydroxide
- Borax
- All the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All the above

11) To obtain the structure as shown in figure which of the following etching process can be used: **1 point**

- Dry etching
- RIE-Cl
- Wet etching
- DRIE

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wet etching

12) Why pre-bake is used? **1 point**

- To evaporate organic contaminants
- To harden PR
- All of the above
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

13) What may be the process used to get the diaphragm structure as shown in the figure given **1 point**

- Wet etching
- Dry etching
- None of the above
- Both wet and dry etching

No, the answer is incorrect.
Score: 0

Accepted Answers:
Dry etching

14) What are the effects of post baking? ***1 point***

- Reduction in PR film thickness
- Change in development properties of PR
- Improvement in adhesion
- All the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All the above

15) To etch SiO_2 which of the following is used ***1 point***

- Solution of HF and $NaHCO_3$
- Solution of HF and NH_4F
- Acetone and/ or IPA
- Solution of HNO_3 and concentrated HCl

No, the answer is incorrect.
Score: 0

Accepted Answers:
Solution of HF and NH_4F

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