Started on	Thursday, 1 August 2024, 12:46 AM
State	Finished
Completed on	Thursday, 1 August 2024, 12:47 AM
Time taken	38 secs
Marks	6.00/6.00
Grade	**10.00** out of 10.00 (**100%**)

Question 1

Correct

Mark 1.00 out of 1.00

Which of the following statements are correct?

Note: In the statements below, all the materials stated are 100% pure and ideal.

- [x] a. monocrystalline silicon has no defects. ✓
- [x] b. multi crystalline silicon has grain boundaries. ✓
- [x] c. poly crystalline silicon has no defects. ✗
- [x] d. amorphous silicon has no defects. ✗

Your answer is correct.

The correct answers are: monocrystalline silicon has no defects. , multi crystalline silicon has grain boundaries.

Question 2

Correct

Mark 1.00 out of 1.00

How many atoms are there in a silicon unit cell?

Answer: 8 ✓

The correct answer is: 8

Question 3

Correct

Mark 1.00 out of 1.00

Which of the following plane(s) is(are) parallel to (100) in a cubic lattice?

- [ ] a. (110)
- [ ] b. (001)
- [ ] c. (010)
- [x] d. $(\bar{1}00)$ ✓

Your answer is correct.

The correct answer is: $(\bar{1}00)$

Question 4

Correct

Mark 1.00 out of 1.00

What is the angle between the planes (100) and (111) in degrees for a cubic crystal? Hint: Look for angle between planes in a crystal.

Answer: 54.7 ✓

The correct answer is: 54.7

Question 5

Correct

Mark 1.00 out of 1.00

Which of the following statements about dopants in silicon are true?

- [x] a. Dopants in incorporated in interstitial sites are defects. ✓
- [x] b. Dopants incorporated in substitutional sites are defects. ✓
- [x] c. Dopants in substitutional sites contribute to the electron or hole concentration in the semiconductor, and are considered electrically "active". ✓

Your answer is correct.

The correct answers are: Dopants incorporated in substitutional sites are defects. , Dopants in incorporated in interstitial sites are defects. , Dopants in substitutional sites contribute to the electron or hole concentration in the semiconductor, and are considered electrically "active".

Question 6

Correct

Mark 1.00 out of 1.00

How many interstitial sites are present in a silicon unit cell?

Answer: 5 ✓

The correct answer is: 5

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