2 - SEE

ⓘ This is a preview of the published version of the quiz

Started: Sep 30 at 9:32am

Quiz Instructions

Question 1 1 pts

What is a Single-Event Upset (SEU)?

- A bit flip or corruption of stored information
- A permanent hardware failure due to radiation
- A signal glitch in analog circuits
- A change in temperature due to ionizing particles

Question 2 1 pts

What does LET stand for in the context of SEE testing?

- Low Energy Threshold
- Linear Energy Transfer
- Local Electron Transmission
- Lateral Energy Trace

Question 3 1 pts

Which SEE type is considered destructive?

- Single-Event Transient
- Single-Event Upset
- Single-Event Latchup
- Single-Event Functional Interrupt

Question 4 1 pts

What is the purpose of the SRIM tool in SEE analysis?

- To simulate thermal effects in semiconductors
- To calculate stopping power and LET
- To measure voltage thresholds
- To analyze electromagnetic interference

Question 5 1 pts

What does the “Sensitive Volume” (SV) refer to?

- The total volume of the test chamber
- The region of a device where charge can cause an SEE
- The volume of the ion beam
- The area of the packaging material

Question 6 1 pts

What is the formula for calculating SEE cross-section (σ)?

- σ = LET × SV
- σ = N / Fluence
- σ = Energy / Distance
- σ = Charge / Area

Question 7 2 pts

A 15 MeV/nucleon Krypton ion beam at TAMU K500 has a Bragg peak LET of approximately 41 MeV·cm²/mg in silicon. What is the approximate range of this ion at the surface of the silicon?

- 0 µm
- 25 µm

○
170 µm

○
600 µm

Question 8 2 pts

If an ion has an LET of 50 MeV·cm²/mg and deposits energy uniformly over a 200 µm path in silicon, approximately how much energy is deposited in MeV? Assume the density of silicon is 2.33 mg/cm³.

○
2.33 MeV

○
10 MeV

○
23.3 MeV

○
1 MeV

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