Assignment 10

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

1. The dilation density strain is a strain of $10^{-5}$ in. That means.

No, the answer is incorrect.

Accepted answers:
- Answer 1: $10^{-5}$ in

2. The number of dislocations are 10^15 in a volume of $10^{-4}$ in. The strain is $10^{-5}$ in. of the total strain of the material.

No, the answer is incorrect.

Accepted answers:
- Answer 1: $10^{-5}$ in

3. The length of the dislocation line is $10^{-4}$ in. in a volume of $10^{-3}$ in. of the material.

No, the answer is incorrect.

Accepted answers:
- Answer 1: $10^{-4}$ in

4. Johnson Cocks materials resist for plastic deformation can be:

- Used for high impact rates applications.
- Used for high temperature applications.
- Used for high temperature applications.

No, the answer is incorrect.

Accepted answers:
- Used for high temperature applications.

5. A material is shock loaded to 60 GPa pressure. Assuming plastic deformation in the shock front, calculate the strain rate. The shock wave velocity is 6.5 M/sec, the reduction in volume is 6, and the width of shock front is 400 microns. What is the answer within the unit. That means why the shock is required and how it is determined as 6.5.

No, the answer is incorrect.

Accepted answers:
- Answer 1: 6.5 M/sec

6. The following are the barriers of deformation mechanisms:

- Grain refinement
- Fracturing
- Phase transformation
- Dislocation structure

No, the answer is incorrect.

Accepted answers:
- Dislocation structure

7. The following are different dislocation motion mechanisms:

- Step controlled dislocation motion
- Tie line activated dislocation motion
- Dislocation forming motion
- Reactions of defects

No, the answer is incorrect.

Accepted answers:
- Step controlled dislocation motion

8. For YC1, Young's modulus is under shear loading will shear strain rate of $10^{-1}$ in. The deformation velocity is $10^{-4}$ in. and the magnitude of Burgers vector is 2.5 angstroms. The activation factor for YC1 is 3. Calculate the mean velocity of dislocations. Answer should be in m/s and do not write the unit.

No, the answer is incorrect.

Accepted answers:
- Answer 1: (2.5/3) m/s

9. A cylinder with a wall length 100 mm x a wall width of a velocity of 706 mm. The final length of the bar after it comes to rest it is 40 mm. Assume linear deformation. Calculate the strain rate of deformation of the bar. What is the answer without the unit. That means why the volume is required and what is determined as 8.3.

No, the answer is incorrect.

Accepted answers:
- Answer 1: 8.3 m/s

10. Which of the following statements are correct for (a) Hapleeon pressure bar?

- Any one of the stress is such that the internal barrier achieves only partially.
- The strain at the center of the bar is $10^{-6}$ in.

No, the answer is incorrect.

Accepted answers:
- Answer 1: The strain at the center of the bar is $10^{-6}$ in.