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NPTEL

Courses » Creep deformation of materials

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Assignment 0

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.   **Due on 2019-02-04, 23:59 IST**

1) Creep is defined as   *1 point*

○ The plastic deformation occurring at high temperatures

○ The time independent elastic deformation of a material.

○ The time dependent plastic deformation of a material.

○ The time independent elasto-plastic deformation of a material.

No, the answer is incorrect.
Score: 0

Accepted Answers:
The time dependent plastic deformation of a material.

2) Which defects among those listed below will influence creep deformation   *1 point*

○ Point defects

○ Line defects

○ Both point and line defects

○ None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both point and line defects

3) The difference between strain hardening exponent and stress exponent.   *1 point*

○ The strain hardening exponent is the exponent of elastic strain showing the dependence of flow stress on elastic strain whereas the stress exponent is the exponent of stress relating strain rate of deformation to stress during elastic deformation

○ The strain hardening exponent is the exponent of strain showing the dependence of flow stress on plastic strain whereas the stress exponent is the exponent of stress relating strain rate of

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stress of deformation to applied strain during plastic deformation

No, the answer is incorrect.
Score: 0

Accepted Answers:
The strain hardening exponent is the exponent of strain showing the dependence of flow stress on plastic
strain whereas the stress exponent is the exponent of stress relating strain rate of deformation to applied
stress during creep deformation

4) A high melting point material is expected to bear a high elastic modulus value.   *1 point*

    ⚪ True

    ⚪ False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

5) The equicohesive temperature is defined as the test temperature below which fine grained   *1 point*
materials are strong and above which they become weak compared to coarse grained materials.

    ⚪ True

    ⚪ False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

6) The dependence of vacancy concentration (N) on temperature (T) is given by the following   *1 point*
relation, where N_o is the initial concentration

    ⚪

$$N = N_o exp(Q/RT)$$

    ⚪

$$N_o = N exp(Q/RT)$$

    ⚪

$$N = N_o + k*T$$

    ⚪

$$N = N_o - k*T$$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$$N_o = N exp(Q/RT)$$

7) The strength of a material typically decreases when we increase the number of grain   *1 point*
boundaries contained within the material

    ⚪ True

    ⚪ False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

8) The activation energy of lattice diffusion is lower than the activation energy of grain   *1 point*
boundary diffusion.

○ True

○ False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

9) A dislocation is   *1 point*

   ○ A line defect that forms when the temperature is higher than a critical temperature

   ○ A line defect that forms when the applied stress is greater than a critical stress

   ○ A line defect that forms when the applied stress is lower than a critical stress.

   ○ A line defect that forms when the temperature is lower than a critical temperature

No, the answer is incorrect.
Score: 0

Accepted Answers:
A line defect that forms when the applied stress is greater than a critical stress

10) Recovery during annealing of a material is defined as   *1 point*

   ○ A process that leads to reduction of stored energy by removal or rearrangement of defects

   ○ A process that leads to the creation of strain free grains

   ○ A process that leads to increase in stored energy of the material

   ○ A process that leads to creation of strained grains

No, the answer is incorrect.
Score: 0

Accepted Answers:
A process that leads to reduction of stored energy by removal or rearrangement of defects

11) The difference between an edge dislocation and a screw dislocation is   *1 point*

   ○ Edge dislocations have their Burgers vector parallel to the dislocation line and Screw dislocations have Burgers vector perpendicular to the dislocation line

   ○ Edge dislocations have their Burgers vector perpendicular to the dislocation line and Screw dislocations have their Burgers vector parallel to the dislocation line

   ○ None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Edge dislocations have their Burgers vector perpendicular to the dislocation line and Screw dislocations have their Burgers vector parallel to the dislocation line

End

Thursday 02 May 2019 03:55 PM