

Material Science IAT 2 (AY 2020-21)

October 2020

Total points 50/50 ?

MS IAT 2 (Oct 2020)

The respondent's email address (shreyas.p@cmrit.ac.in) was recorded on submission of this form.

✓ Plastic deformation in Metals occur due to... * 3/3

- Slip
- Twinning
- None of the above
- Both of the above



✓ While calculating Engineering Stress you consider..... * 3/3

- Instantaneous C/S Area
- Initial C/S Area
- All of the above
- None of the above



✓ Triple point is a point on the Unary Phase diagram of water where... * 2/2

- Water exists in both liquid and gaseous forms.
- Water exists only in liquid form
- Water exists only in solid form
- Water coexists in solid, liquid and gaseous forms. ✓

✓ Fatigue failure occurs due to... * 3/3

- Cyclic Loading ✓
- Point Load
- Uni directional Loading
- None of the Above

✓ How many modes of failure are present? * 2/2

- 1
- 2
- 3 ✓
- 4



✓ Dimples are seen on the fractured surface of a.... * 3/3

- Ductile material
- Brittle material
- None of the above
- All of the above



✓ Fracture Toughness is defined as the amount of energy required for... * 2/2

- The already existing crack to grow and cause fracture of the material.
- The crack to form on the surface of the material.
- The crack to form on the subsurface of the material.
- None of the above



✓ Ultimate Tensile Strength is given by... * 2/2

- Area under the elastic region of the stress-strain curve
- Area under the entire stress-strain curve
- None of the above
- All of the above



✓ Which of the following is not a type of fatigue loading? * 3/3

- Repeated fatigue loading
- Completely reversed fatigue loading
- Point fatigue loading
- Irregular fatigue loading



✓ Beta phase in the Iron - Iron Carbide diagram does not exist because.... * 3/3

- The scientists forgot about the greek alphabet "Beta"
- The scientists assumed that the Beta was a different phase than Alfa because the metal would turn non magnetic above 768 degree celcius.
- Earlier the scientists assumed that the Beta was a different phase than Alfa because the metal would turn non magnetic above 768 degree Celsius but later realized that it had the same crystal structure as Alpha ferrite and therefore could not be marked as a separate phase.
- None of the above.



✓ Toughness is given by.... * 2/2

- Area under the elastic region of the stress-strain curve
- Area under the entire stress-strain curve
- None of the above
- All of the above



✓ Stiffness is same as.... *

2/2

- Young's Modulus
- Modulus of Elasticity
- None of the above
- All of the above



✓ Gamma Austenite phase in the Iron - Iron Carbide diagram has which of the following crystal structures? *

3/3

- Body Centered Cubic Structure
- Simple Cubic Structure
- Hexagonal Close Packed Structure
- Face Centered Cubic Structure



✓ Stress relaxation occurs because... *

3/3

- The material absorbs the load to some extent and then it starts applying a reaction load on the tool that is applying the load and therefore the stress experienced by the material is lesser.
- The material transfers the load applied on it onto a support structure attached to it and therefore stress relaxation occurs.
- The material has plastically deformed slightly due to the constant load and therefore the load required to hold that elongation is less and therefore the stress experienced by the material is lesser.
- None of the above



✓ During which stage of creep does the material undergo creep failure? * 2/2

- Stage 2
- Stage 3
- Stage 1
- Stage 4



✓ Alpha Ferrite phase in the Iron - Iron Carbide diagram has which of the following crystal structures? * 3/3

- Body Centered Cubic Structure
- Simple Cubic Structure
- Hexagonal Close Packed Structure
- Face Centered Cubic Structure



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✓ Which of the following is a type of solid solution? *

2/2

- Regular Substitutional solid solution
- Interstitial solid solution
- Irregular Substitutional solid solution
- All of the above

✓

✓ While calculating True Stress you consider.... *

2/2

- Instantaneous C/S Area
- Initial C/S Area
- All of the above
- None of the above

✓

Name *

Shreyas



✓ Resilience is given by.... *

3/3

- Area under the elastic region of the stress-strain curve ✓
- Area under the entire stress-strain curve
- None of the above
- All of the above

✓ To determine the offset yield strength, a line is drawn by offsetting the linear elastic region on the graph by... *

2/2

- 0.02% strain
- 0.04% strain
- 0.1% Strain
- 0.2% strain ✓

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