

Multiple Choice Questions:

1. Time dependent permanent deformation is called _____.
 (a) Plastic deformation (b) Elastic deformation
 (c) Creep (d) Anelastic deformation
2. Figure-out the odd point in the following
 (a) Proportional limit (b) Elastic limit (c) Yield point (d) Fracture point
3. If a material is subjected to two incremental true strains namely ϵ_1 and ϵ_2 , then the total true strain is
 (a) $\epsilon_1 * \epsilon_2$ (b) $\epsilon_1 - \epsilon_2$ (c) $\epsilon_1 + \epsilon_2$ (d) ϵ_1 / ϵ_2
4. Engineering stress-strain curve and True stress-strain curve are equal up to
 (a) Proportional limit (b) Elastic limit (c) Yield point (d) Tensile strength point
5. Value of Poisson's ratio for ionic solids in the range of
 (a) 0.1 (b) 0.2 (c) 0.3 (d) 0.4
6. Hydrostatic stress results in the following
 (a) Linear strain (b) Shear strain (c) Both linear and shear strains (d) None
7. High elastic modulus in materials arises from
 (a) High strength of bonds (b) Weak bonds (c) combination of bonds (d) None
8. Change in elastic modulus for ordinary materials between 0K and melting point is
 (a) 10-20% increase (b) 10-20% decrease (c) 80-90% decrease (d) 80-90% increase
9. Bauschinger effect
 (a) Hysteresis loss during loading and unloading (b) Anelastic deformation
 (c) Dependence of yield stress on path and direction (d) None
10. Shape of true stress-strain curve for a material depends on
 (a) Strain (b) Strain rate (c) Temperature (d) All
11. Toughness of a material is equal to area under _____ part of the stress-strain curve.
 (a) Elastic (b) Plastic (c) Both (d) None
12. True stress-strain curve need to be corrected after
 (a) Elastic limit (b) Yield limit (c) Tensile strength (d) no need to correct
13. Following condition represents onset of necking
 (a) $\epsilon_u = n$ (b) $\epsilon_u = 1-n$ (c) $\epsilon_u = 1+n$ (d) $\epsilon_u = \ln(1+n)$
14. As compared with conventional stress-strain curve, the true stress-strain curve is
 (a) Above and right (b) Below and right (c) Above and left (d) Below and left
15. According to distortion-energy criterion, yielding occurs when
 (a) Distortion energy reaches a critical value
 (b) Second invariant of the stress deviator exceeded some critical value
 (c) Octahedral shear stress reaches a critical value
 (d) All
16. von Mises and Tresca criteria give different yield stress for
 (a) Uni-axial stress (b) Balanced bi-axial stress (c) Pure shear stress (d) All
17. Plastic deformation results from the following
 (a) Slip (b) Twinning (c) Both (d) None
18. Time dependent recoverable deformation under load is called _____ deformation.
 (a) Elastic (b) Anelastic (c) Elastic after-effect (d) Visco-elastic

Answers:

1. c
2. d
3. c
4. c
5. b
6. d
7. a
8. b
9. c
10. d
11. c
12. c
13. a
14. c
15. d
16. c
17. c
18. b