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Theory of Structures MCQ Test

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Q1. What is the shape factor for a triangular section In plastic analysis?

- **A.** 1.5
- **B.** 2.5
- **C.** 1.34
- **D. 2.34**

Q2. Which of the following is the equivalent length of a column of length having both the ends fixed?

- **A.** L
- **B. L/2**
- **C.** 2 L
- **D.** None of the above

Q3. The maximum principal stress theory for the failure of a material at an elastic point is known as .....

- **A.** Von Mises' theory
- **B. Rankine's theory**
- **C.** St. Venant's theory
- **D.** None of the above

Q4. Which of the following is the correct statement?

- **A.** If tensile stress is less than axial stress, the section experiences compressive stress
- **B.** If tensile stress is equal to axial stress, the section experiences compressive stress
- **C.** The moment of inertia is calculated about the axis about which bending takes place
- **D. All of the above**

Q5. What is the ratio of the stresses produced by a suddenly applied load and by a gradually applied load on a bar?

- **A.** 1
- **B. 2**
- **C.** 3
- **D.** 4

Q6. What is called the load on a spring per unit deflection?

- **A. Stiffness**
- **B.** Proof stress
- **C.** Proof load
- **D.** None of the above

Q7. The co-efficient of wind resistance of a circular surface is .....

- **A.** 1/2
- **B.** 1/3
- **C.** 2/2
- **D. 2/3**

Q8. What is the ratio of lateral strain to axial strain of a homogeneous material?

- **A.** Yield ratio
- **B.** Plastic ratio
- **C.** Hooke's ratio
- **D. Poisson's ratio**

Q9. What is called the strain energy stored in a spring when subjected to greatest load without being permanently distorted?

- **A.** Stiffness
- **B.** Proof load
- **C.** Proof stress
- **D. Proof resilience**

Q10. What is co-efficient of wind resistance of a circular surface?

- **A.** 1/2
- **B. 2/3**
- **C.** 3/2
- **D.** 1/3

Q11. The assumption in the theory of bending of beams, is .....

- **A.** Material is isotropic
- **B.** Material is homogeneous
- **C.** Each layer is independent to expand or to contract
- **D. All of the above**

Q12. What is called the load on a spring per unit deflection?

- **A. Stiffness**
- **B.** Proof load
- **C.** Proof stress
- **D.** Proof resilience

Q13. The shear stress is not directly proportional to ..... in a shaft.

- **A.** Angle of twist
- **B.** Radius of the shaft
- **C. Length of the shaft**
- **D.** Modulus of rigidity.

Q14. The locus of the moment of inertia about inclined axes to the principal axis is .....

- **A.** Circle
- **B. Ellipse**
- **C.** Parabola

- **D.** Straight line

Q15. Which of the following option is known as the maximum strain theory for the failure of a material at the elastic limit?

- **A.** Haig's theory
- **B.** Rankine's theory
- **C. St. Venant's theory**
- **D.** Von Mises's theory

Q16. The shape factor of standard rolled beam section varies from

- **A.** 1.20 to 1.30
- **B.** 1.30 to 1.40
- **C. 1.10 to 1.20**
- **D.** 1.40 to 1.50

Q17. Stress may be defined as

- **A. Force per unit area**
- **B.** Force per unit length
- **C.** Force per unit volume
- **D.** None of the above

Q18. The shape factor for a circular section, is ..... in plastic analysis.

- **A.** 1.6
- **B.** 1.5
- **C. 1.7**
- **D.** None of the above

Q19. The forces in the members of simple trusses, may be analysed by

- **A.** Method of joints
- **B.** Graphical method
- **C.** Method of sections
- **D. All of the above**

Q20. Coefficient of wind resistance of a rectangular surface is .....

- **A.** 1/2
- **B.** 1/3
- **C. 2/3**
- **D.** 3/2

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