

Duration: 120 Mins

Total Marks: 25

ID: ITISKILL9656EI

Student Name: _____ Roll No: _____

1. What is the safe stress if the ultimate stress of a material is 35 kg/mm^2 and factor of safety is 5?

- A) 0.7 B) 0.143
C) 1.43 D) 7

2. Which one is the ratio of stress?

- A) Load and diameter B) Load and time
C) Load and direction D) Load and area

3. What is the formula for bulk modulus?

- A) Shear stress/Shear strain B) Volumetric stress/Volumetric strain
C) Tensile stress/Tensile strain D) Compressive stress/Compressive strain

4. What is the ratio between stress and strain?

- A) Youngs Modulus B) Yield point
C) Poisson's ratio D) Factor of safety

5. Which law states that within elastic limit stress is directly proportional to strain?

- A) Newtons law B) Charles law
C) Joules law D) Hooks law

6. What is the ratio of ultimate load to area of original cross section?

- A) Youngs modulus B) Factor of safety
C) Ultimate stress D) Yield point

7. What is the tensile strain if a force of 3.2 KN is applied to a bar of original length 2800 mm extends the bar by 0.5 mm?

- A) 0.0001968 B) 0.0001687
C) 0.0001786 D) 0.0001867

8. What is the ratio between the change in dimension to its original dimension of the substance?

- A) Factor of safety B) Stress
C) Strain D) Poisson's ratio

9. Which symbol is used to express change in length?

- A) e B) L
C) Δl D) I

10. Which is thermo plastic material?

- A) Neoprene B) Butyl rubber
C) Vinyl polymers D) Nylon

11. Which is elastic material?

- A) Nylon B) Celluloid
C) Polycarbonates D) Polystyrenes

12. What is the youngs modulus if a wire of 2m long, 0.8 mm² in cross section increases its length by 1.6 mm on suspension of 8 kg weight from it?

- A) 1.25 kg/mm^2 B) 125 kg/mm^2
C) 12500 kg/mm^2 D) 12.5 kg /mm²

13. What is the ratio between ultimate stress to working stress?

- A) Factor of safety B) Young's modulus
C) Bulk modulus D) Modulus of rigidity

14. What is the tensile stress if a square rod of 10 mm side is tested for a tensile load of 1000 kg?

- A) 100 kg/mm^2 B) 1000 kg/mm^2
C) 10 kg/mm^2 D) 1 kg/mm^2

15. Which force acts on rivets?

- A) Tensile force B) Compressive force
C) Bending force D) Shear force

16. What is the ratio of shear stress to shear strain?

- A) Modulus of rigidity B) Yield point
C) Modulus of elasticity D) Bulk modulus

17. Which force acts on crank shaft?

- A) Torsional stress B) Shear stress
C) Compressive stress D) Tensile stress

18. What is the ratio of change in length to original length?

- A) Lateral strain B) Poisson's ratio
C) Volumetric strain D) Linear strain

19. How much strain is developed in an iron rod of 1 metre length gets elongated by 1 cm, if a force of 100 kg is applied at one end?

- A) 0.01 B) 0.0001
C) 0.1 D) 0.001

20. What is the ratio between lateral strain and longitudinal strain?

- A) Poisson's ratio B) Bulk modulus
C) Young's modulus D) Hooks law

21. What is the maximum percentage of stretch of its original length is allowable for elastic materials?

- A) 400% B) 300%

- C) 100% D) 200%

22. Which is thermosetting plastic?

- A) Celluloid B) Melamine resins
C) Vinyl polymers D) Polystyrenes

23. What is the unit of strain?

- A) No unit B) Kg/cm^2
C) Newton/metre^2 D) Metre

24. What is the term used for maximum stress attained by a material before rupture?

- A) Tensile stress B) Ultimate stress
C) Working stress D) Compressive stress

25. What force will be required to punch a hole of 10 mm dia in a 1 mm thick plate, if the allowable shear stress is 50N/mm^2 ? ($\pi = 22/7$)

- A) 1571.4 N B) 1757 N
C) 1575 N D) 1577 N