

Duration: 60 Mins

Total Marks: 25

ID: ITISKILL5502JT

Student Name: _____ Roll No: _____

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

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

- A) No unit B) Metre
C) Newton/metre² D) Kg/cm²

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

- A) L B) l
C) e D) delta l

10. What is the ratio between stress and strain?

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

3. Which is elastic material?

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

11. 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) 125 kg/mm² B) 12500 kg/mm²
C) 12.5 kg/mm² D) 1.25 kg/mm²

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

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

12. 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) 0.0001687 B) 0.0001968
C) 0.0001867 D) 0.0001786

5. 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/mm² B) 1 kg/mm²
C) 10 kg/mm² D) 1000 kg/mm²

13. 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) 0.1
C) 0.001 D) 0.0001

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

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

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

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

7. Which is thermo plastic material?

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

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

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

8. What is the safe stress if the ultimate stress of a material is 35 kg/mm² and factor of safety is 5?

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

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

- A) Modulus of rigidity B) Factor of safety

C) Young's modulus D) Bulk modulus

17. 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) 1757 N B) 1571.4 N
C) 1577 N D) 1575 N

18. Which force acts on crank shaft?

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

19. What is the formula for bulk modulus?

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

20. Which force acts on rivets?

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

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

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

22. Which is thermosetting plastic?

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

23. Which one is the ratio of stress?

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

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

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

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

- A) 300% B) 200%
C) 100% D) 400%