

10. Elasticity

Q. ID: ITISKILL6271UJ

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Question Paper

Duration: 30 Mins

Total Marks: 25

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Student Name: _____ Roll No: _____

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

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

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

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

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

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

4. 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) 1.25 kg/mm²
- C) 12.5 kg/mm²
- D) 12500 kg/mm²

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

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

6. What is the unit of strain?

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

7. What is the formula for bulk modulus?

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

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

- A) δl
- B) e
- C) l
- D) L

9. Which is thermo plastic material?

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

10. Which force acts on crank shaft?

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

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

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

12. Which is elastic material?

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

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

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

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

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

15. Which is thermosetting plastic?

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

16. Which force acts on rivets?

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

17. What is the ratio between stress and strain?

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

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

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

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

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

20. 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 50 N/mm^2 ? ($\pi = 22/7$)

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

21. Which one is the ratio of stress?

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

22. 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

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

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

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

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

25. 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) 0.0001 B) 0.1
C) 0.001 D) 0.01