

10. Elasticity

Q. ID: ITISKILL6271UJ

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Answer Key

Duration: 30 Mins

Total Marks: 25

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

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

Answer: C) Hooks law

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

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

Answer: A) Linear strain

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

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

Answer: D) Modulus of rigidity

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

- A) l
- B) L
- C) Δl
- D) e

Answer: C) Δl

5. Which is thermosetting plastic?

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

Answer: B) Melamine resins

6. 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

Answer: A) Strain

7. 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

Answer: B) Volumetric stress/Volumetric strain

8. Which force acts on crank shaft?

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

Answer: B) Torsional stress

9. 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) 12500 kg/mm²
- D) 12.5 kg/mm²

Answer: C) 12500 kg/mm²

10. 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

Answer: D) 0.01

11. 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) 0.0001786
- B) 0.0001867
- C) 0.0001687
- D) 0.0001968

Answer: A) 0.0001786

12. Which force acts on rivets?

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

Answer: D) Shear force

13. Which one is the ratio of stress?

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

Answer: D) Load and area

14. 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/mm²? ($\pi = 22/7$)

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

Answer: C) 1571.4 N

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

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

Answer: C) Poisson's ratio

16. 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
C) 1.43
- B) 0.143
D) 7

Answer: D) 7

17. What is the ratio between stress and strain?

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

Answer: D) Youngs Modulus

18. Which is elastic material?

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

Answer: A) Nylon

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

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

Answer: C) Ultimate stress

20. Which is thermo plastic material?

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

Answer: D) Vinyl polymers

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

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

Answer: A) Factor of safety

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

- A) 1000 kg/mm²
C) 1 kg/mm²
- B) 10 kg /mm²
D) 100 kg/mm²

Answer: B) 10 kg /mm²

23. What is the unit of strain?

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

Answer: D) No unit

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

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

Answer: B) Ultimate stress

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

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

Answer: C) 300%