

Duration: 120 Mins

Total Marks: 25

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1. 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) 12.5 kg/mm²
B) 12500 kg/mm²
C) 125 kg/mm²
D) 1.25 kg/mm²

Answer: B) 12500 kg/mm²

2. Which is elastic material?

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

Answer: A) Nylon

3. What is the formula for bulk modulus?

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

Answer: A) Volumetric stress/Volumetric strain

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

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

Answer: B) Poisson's ratio

5. 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) 0.001
C) 0.0001
D) 0.1

Answer: A) 0.01

6. 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) 0.0001786
C) 0.0001687
D) 0.0001867

Answer: B) 0.0001786

7. Which one is the ratio of stress?

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

Answer: B) Load and area

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

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

Answer: B) 7

9. 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) 1571.4 N
B) 1757 N
C) 1575 N
D) 1577 N

Answer: A) 1571.4 N

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

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

Answer: B) Ultimate stress

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

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

Answer: B) Modulus of rigidity

12. Which force acts on rivets?

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

Answer: C) Shear force

13. What is the ratio between stress and strain?

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

Answer: B) Youngs Modulus

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

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

Answer: A) Factor of safety

15. 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
C) 1000
kg/mm²

- B) 1 kg/mm²
D) 10 kg
/mm²

Answer: D) 10 kg /mm²

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

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

Answer: C) Ultimate stress

17. What is the unit of strain?

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

Answer: C) No unit

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

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

Answer: C) 300%

19. 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

20. Which law states that within elastic limit stress is directly

proportional to strain?

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

Answer: B) Hooks law

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

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

Answer: B) delta l

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

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

Answer: B) Linear strain

23. Which is thermo plastic material?

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

Answer: D) Vinyl polymers

24. Which is thermosetting plastic?

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

Answer: C) Melamine resins

25. Which force acts on crank shaft?

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

Answer: B) Torsional stress