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Question Paper

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Score: 18/25 (72.00%)

Code: 3546

1. Which is elastic material?

- A) **Nylon (Correct)** B) Polystyrenes
C) Celluloid D) Polycarbonates

2. Which is thermo plastic material?

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

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

- A) 100% B) 200%
C) **300% (Correct)** D) 400%

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

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

5. What is the unit of strain?

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

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

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

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

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

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

- A) L B) **delta l (Correct)**
C) I D) e

9. Which one is the ratio of stress?

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

10. Which force acts on rivets?

- A) Tensile force B) Compressive force
C) **Shear force** D) Bending force (Incorrect)

11. What is the formula for bulk modulus?

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

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

- A) Newtons law B) **Hooks law (Correct)**
C) Joules law D) Charles law

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

- A) Tensile stress B) Compressive stress (Incorrect)
C) Working stress D) **Ultimate stress**

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

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

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

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

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

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

17. What is the ratio between stress and strain?

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

18. Which force acts on crank shaft?

- A) Shear stress B) **Torsional stress (Correct)**
C) Tensile stress D) Compressive stress

19. Which is thermosetting plastic?

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

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) 1575 N
C) 1571.4 N (Correct) D) 1577 N

21. 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) 10 kg /mm² (Correct)
C) 100 kg/mm² D) 1000 kg/mm²

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) 0.0001786 (Correct) B) 0.0001687
C) 0.0001867 D) 0.0001968

23. 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) 0.1 B) 0.01 (Correct)
C) 0.001 D) 0.0001

24. What is the young's 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/mm² B) 12.5 kg /mm²
C) 125 kg/mm² D) 12500 kg/mm² (Correct)

25. 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) 1.43 D) 7 (Correct)