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Score: 15/25 (60.00%)

Code: 0603

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/cm<sup>2</sup> B) Newton/metre<sup>2</sup>  
C) Metre D) **No unit (Correct)**

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

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

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

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

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 (Incorrect) B) Compressive force  
C) **Shear force** D) Bending force

11. What is the formula for bulk modulus?

- A) Tensile stress/Tensile strain (Incorrect) B) Compressive stress/Compressive strain  
C) **Volumetric stress/Volumetric strain** 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**  
C) Joules law (Incorrect) D) Charles law

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

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

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

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

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

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

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  
C) **Youngs Modulus (Correct)** D) Poisson's ratio

18. Which force acts on crank shaft?

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

19. Which is thermosetting plastic?

A) Vinyl polymers

B) Polystyrenes

C) Celluloid

**D) Melamine resins  
(Correct)**

**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  $50 \text{ N/mm}^2$ ? ( $\pi = 22/7$ )

A) 1757 N

B) 1575 N (Incorrect)

**C) 1571.4 N**

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)  $1 \text{ kg/mm}^2$

**B) 10 kg  
/mm<sup>2</sup>  
(Correct)**

C)  $100 \text{ kg/mm}^2$

D)  $1000 \text{ kg/mm}^2$

**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,  $0.8 \text{ mm}^2$  in cross section increases its length by 1.6 mm on suspension of 8 kg weight from it?

A)  $1.25 \text{ kg/mm}^2$

B)  $12.5 \text{ kg/mm}^2$

C)  $125 \text{ kg/mm}^2$

**D) 12500  
kg/mm<sup>2</sup>  
(Correct)**

**25.** What is the safe stress if the ultimate stress of a material is  $35 \text{ kg/mm}^2$  and factor of safety is 5?

A) 0.143

B) 0.7

C) 1.43

**D) 7 (Correct)**