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Score: 20/50 (40.00%)

Code: 0816

1. Which affects the centre of gravity of the object?

- A) Weight
 B) **Mass (Correct)**
 C) Density
 D) Shape

2. What is the name of the point at which all the weight of the body concentrated?

- A) Initial point (Incorrect)
 B) **Centre of gravity**
 C) Centroid
 D) Central point

3. Where the centre of gravity of a circle lies?

- A) **At its centre**
 B) Any where on its radius (Incorrect)
 C) Any where on its circumference
 D) Any where on its diameter

4. What is the centre of gravity of a right circular cone from its base?

- A) $h/2$
 B) $h/3$
 C) **$h/4$ (Correct)**
 D) $h/5$

5. What is the centre of gravity of a rectangular body?

- A) Longer side of rectangle
 B) Shorter side of rectangle
 C) **At the point of intersection of its diagonals (Correct)**
 D) At the corners

6. What is the centre of gravity of a solid hemisphere from its base?

- A) $4r/5$
 B) **$3r/8$**
 C) $3r/4$ (Incorrect)
 D) $r/2$

7. Which state of equilibrium's example is A cone resting on its tip?

- A) Stable
 B) Neutral
 C) **Unstable**
 D) Horizontal (Incorrect)

8. Which one of the following geometrical shapes centre of gravity lies from its base is $1/3$ of its height?

- A) Square (Incorrect)
 B) Rhombus
 C) **Triangle**
 D) Cone

9. Which state of equilibrium's example is, A cone resting on its base?

- A) Un-stable
 B) Neutral

C) **Stable**
 D) Bothe A and B (Incorrect)

10. What is the centre of gravity of a semi circle of diameter 12 cm?

- A) 2.24 cm (Incorrect)
 B) **2.54 cm**
 C) 3.25 cm
 D) 2.75 cm

11. Which is elastic material?

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

12. Which is thermo plastic material?

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

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

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

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

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

15. What is the unit of strain?

- A) Kg/cm^2 (Incorrect)
 B) Newton/metre^2
 C) Metre
 D) **No unit**

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

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

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

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

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

- A) L (Incorrect)
 B) **Δl**
 C) l
 D) e

19. Which one is the ratio of stress?

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

20. Which force acts on rivets?

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

21. What is the formula for bulk modulus?

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

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

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

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

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

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

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

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

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

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

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

27. What is the ratio between stress and strain?

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

28. Which force acts on crank shaft?

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

29. Which is thermosetting plastic?

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

30. 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) 1757 N (Incorrect)
C) **1571.4 N**
- B) 1575 N
D) 1577 N

31. 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/mm²
C) 100 kg/mm²
- B) **10 kg /mm² (Correct)**
D) 1000 kg/mm²

32. 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**
C) 0.0001867 (Incorrect)
- B) 0.0001687
D) 0.0001968

33. 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
C) 0.001
- B) **0.01 (Correct)**
D) 0.0001

34. 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) 1.25 kg/mm²
C) 125 kg/mm²
- B) 12.5 kg /mm²
D) **12500 kg/mm² (Correct)**

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

- A) 0.143
C) 1.43 (Incorrect)
- B) 0.7
D) **7**

36. What is the term used for the method of calculating various quantities and expenditure on a particular job or process?

- A) **Estimation (Correct)**
C) Specification
- B) Drawing
D) Plan

37. Which authority publishes schedule of rates?

- A) Individual
B) Corporate

C) Partnership firm

D) Government department (Correct)

38. What is the relative permittivity of rubber?

A) Between 2 and 3

B) Between 5 and 6 (Incorrect)

C) Between 8 and 10

D) Between 12 and 14

39. What is the estimation of milling cost of a rectangular block size 100 X 80 X60 mm, if cost of the milling is Rs.2/sq.cm?

A) Rs.652/-

B) Rs.752/- (Correct)

C) Rs.572/-

D) Rs.960/-

40. What is the total wattage in a room if 2 tube lights of 50W rating, 2 fans of 80W rating, 2 numbers of light points of 60W rating, one fan point of 60W rating and one 3 pin socket of 100W rating?

A) 340 W

B) 440 W

C) 540 W (Correct)

D) 640 W

41. Which affects the centre of gravity of the object

A) Weight

B) Mass (Correct)

C) Density

D) Shape

42. What is the name of the point at which all the weight of the body concentrated?

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46. What is the centre of gravity of a solid hemisphere from its base?

A) $4r/5$

B) $3r/8$ (Correct)

C) $3r/4$

D) $r/2$

47. What is the centre of gravity of a sphere?

A) At the centre

B) On the circumference

C) At the diameter

D) At the radius (Incorrect)

48. Which state of equilibrium's example is A cone resting on its tip?

A) Stable

B) Neutral

C) Unstable (Correct)

D) Horizontal

49. Which state of equilibrium's example is, A cone resting on its base?

A) Un-stable

B) Neutral

C) Stable

D) Bothe A and B (Incorrect)

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