

Online Assessment (Even Sem/Part-I/Part-II Examinations 2019 - 2020)

Course Name -Strength of Materials

Course Code - DME203/DCE203

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Answer all the questions. Each question carry one mark.

9. 1.The deformation per unit length is called

Mark only one oval.

- tensile stress
- compressive stress
- shear stress
- none of these

10. 2. A rigid body has Poisson's ratio equal to _____

Mark only one oval.

- 0
- 1
- Less than 1
- greater than 1

11. 3. The ratio of stress and strain is known as _____

Mark only one oval.

- Modulus of elasticity
- Young's modulus
- Both Modulus of elasticity and Young's modulus
- None of these

12. 4. The relation between modulus of elasticity (E), modulus of rigidity (G) and bulk modulus (K) is given as

Mark only one oval.

- $K+G / (3K+ G)$
- $3 KG / (3K+ G)$
- $3 KG / (9K+ G)$
- $9 KG / (3K+ G)$

13. 5. When a rectangular bar is uniaxially loaded, the volumetric strain (ϵ_v) is given as

Mark only one oval.

- $\sigma_x / E(1- \mu)$
- $\sigma_x / E(1+ \mu)$
- $\sigma_x / E(1- 2\mu)$
- $\sigma_x / E(1+2\mu)$

14. 6. The ability of the material to deform without breaking is called

Mark only one oval.

- Elasticity
- Plasticity
- Creep
- None of these

15. 7. Which of the following material is more elastic?

Mark only one oval.

- Rubber
- Glass
- Steel
- Wood

16. 8. A brittle material has

Mark only one oval.

- No elastic zone
- No plastic zone
- Large plastic zone
- None of these

17. 9. The ratio of lateral strain to linear strain is called

Mark only one oval.

- Modulus of Elasticity
- Modulus of Rigidity
- Bulk Modulus
- Poisson's Ratio

18. 10. The value of Poisson's ratio depends upon

Mark only one oval.

- Nature of load, tensile or compressive
- Magnitude of load
- Material of the test specimen
- Dimensions of the test specimen

19. 11. Which of the following is a dimensionless quantity?

Mark only one oval.

- Shear stress
- Poisson's ratio
- Hoop stress
- None of these

20. 12. The thermal stress induced in a steel rod is compressive, if temperature _____

Mark only one oval.

- decreases
- increases
- remains constant
- None of these

21. 13. The value of elasticity increases, when temperature _____

Mark only one oval.

- increases
- decreases
- remains constant
- None of these

22. 14. What is the value of thermal stress, if a rod of 3 m is heated at 50 oC and is fixed at both the ends? (Take $\alpha = 10 \times 10^{-6} / \text{oC}$ & $E = 200 \times 10^3 \text{ Mpa}$)

Mark only one oval.

- 25 Mpa
- 50 Mpa
- 100 Mpa
- 150 Mpa

23. 15. In thin cylinders, the thickness should be _____ times of internal diameter(Probable duplicate)

Mark only one oval.

- 1/20
- 1/15
- 1/30
- 1/40

24. 16. The units of discharge are _____

Mark only one oval.

- m/s
- m²/s
- m³/s
- m

25. 17. What is the bending moment at end supports of a simply supported beam?
(Probable duplicate)

Mark only one oval.

- Maximum
- Minimum
- Zero
- Uniform

26. 18. Sagging, the bending moment occurs at the _____ of the beam

Mark only one oval.

- At supports
- Mid span
- Point of contraflexure
- Point of emergence

27. 19. At the point of contraflexure, the value of bending moment is _____

Mark only one oval.

- Zero
- Maximum
- Can't be determined
- Minimum

28. 20. SI units of Bending moment is _____

Mark only one oval.

- kN
- kN²
- kNm
- km

29. 21. The beam having one end free and one end fixed is called as _____

Mark only one oval.

- Cantilever beam
- Continuous beam
- Overhang beam
- Simply supported beam

30. 22. Moment of inertia is the

Mark only one oval.

- Second moment of area
- Second moment of mass
- Second moment of force
- All of these

31. 23. Moment of Inertia of a solid sphere of mass m and radius r is

Mark only one oval.

- $2mr^2/3$
- $2mr^2/5$
- mr^2
- $mr^2/2$

32. 24. The parallel axis theorem uses the _____ of the distance

Mark only one oval.

- Square root
- Square
- Cube root
- Cube

33. 25. The distance in the parallel axis theorem is multiplied by _____

Mark only one oval.

- Area
- Volume
- Linear distance
- Area/Volume

34. 26. Moment of inertia of a circular section about an axis perpendicular to the section is

Mark only one oval.

- $\pi d^3/16$.
- $\pi d^3/32$
- $\pi d^4/32$
- $\pi d^4/64$.

35. 27. The moment of inertia of a square of side a about its base is

Mark only one oval.

$a^4/3$

$a^3/12$

$a^3/3$

$a^2/16$

36. 28. The unit of moment of inertia is

Mark only one oval.

L

L^2

L^3

L^4

37. 29. The moment of inertia of a rectangle base ' b ' and depth ' d ' about the base will be

Mark only one oval.

$bd^2/6$

$bd^3/12$

$db^3/12$

$bd^3/3$

38. 30. Which of the following is a differential equation for deflection?

Mark only one oval.

$dy / dx = (M / EI)$

$dy / dx = (MI / E)$

$d^2y / dx^2 = (M / EI)$

$d^2y / dx^2 = (ME / I)$

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