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Q No: 01

$P=4^2EI/L^2$ is the equation of Euler's crippling load if

- A. Both the ends are fixed
- B. Both the ends are hinged
- C. One end is fixed and other end is free
- D. One end is fixed and other end is hinged

ANS: A

Q No: 02

Pick up the correct statement from the following:

- A. The structural member subjected to compression and whose dimensions are small as compared to its length, is called a stmnt
- The vertical compression members are generally known as columns or stanchions
- C. Deflection in lateral direction of a long column, is generally known as buckling
- D. All the above

ANS: D

Q No: 03

**$\sigma_y/n [1 - a (1/r)^2]$ is the empirical formula,
For calculating the allowable stress of long columns
known as**

- A. Straight line formula
- B. Parabolic formula
- C. Perry's formula
- D. Rankine's formula

ANS: B

Q No: 04

Maximum principal stress theory for the failure of a material at elastic point, is known

- A. Guest's or Trescas' theory
- B. St. Venant's theory
- C. Rankine's theory
- D. Von Mises' theory

ANS: C

Q No: 05

Pick up the correct statement from the following:

- A. The moment of inertia is calculated about the axis about which bending takes place
- B. If tensile stress is less than axial stress, the section experiences compressive stress
- C. If tensile stress is equal to axial stress, the section experiences compressive stress
- D. All the above

ANS: D

Q No: 06

A composite beam is composed of two equal strips one of brass and other of steel. If the temperature is raised

- A. Steel experiences tensile force
- B. Brass experiences compressive force
- C. Composite beam gets subjected to a couple
- D. All the above

ANS: D

Q No: 07

A shaft subjected to a bending moment M and a torque T, experiences

- A. Maximum bending stress = $\frac{32M}{d^3}$
- B. Maximum shear stress = $\frac{16T}{d^3}$
- C. Both A. and B.
- D. Neither A. nor B.

ANS: C

Q No: 08

A two hinged parabolic arch of span l and rise h carries a load varying from zero at the left end to A. $\frac{1}{4}hl$ thrust is

- B. $\frac{1}{8}hl$
- C. $\frac{1}{12}hl$
- D. $\frac{1}{16}hl$

ANS: D

Q No: 09

The horizontal thrust on the ends of a two hinged semicircular arch of radius carrying

- A. A uniform $\frac{4}{3}$
- B.
- C. end, is
- D. All the above

ANS: D

Q No: 10

Maximum strain theory for the failure of a material at the elastic limit, is known as

- A. Guest's or Tresca's theory
- B. St. Venant's theory
- C. Rankine's theory
- D. Haig's theory

ANS: B

