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Strength of Materials MCQ

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Q1. What is the unit of force in S.I. units?

- A. Watt
- B. Dyne
- **C. Newton**
- D. Kilogram

Q2. What is called the materials which have the same elastic properties in all directions?

- A. Hard
- B. Brittle
- **C. Isotropic**
- D. Homogeneous

Q3. The factor of safety is the

- A. Ratio of stress to strain
- B. Ratio of longitudinal strain to stress
- **C. Ratio of ultimate stress to the permissible stress**
- D. None of the above

Q4. Influence lines are drawn for structures

- A. Pin-jointed truss
- **B. Of any type**
- C. Statically determinate

- D. None of the above

Q5. For a simply supported beam with a central load the bending moment is

- A. Least at the centre
- B. Least at the supports
- C. **Maximum at the centre**
- D. Maximum at the supports

Q6. What is the minimum number of rivets for the connection of a gusset plate?

- A. **2**
- B. 3
- C. 5
- D. 7

Q7. A reinforced concrete beam is assumed to be made of

- A. Isotropic material
- B. Homogeneous material
- C. **Heterogeneous material**
- D. None of the above

Q8. The value of poisson's ratio always remains

- A. Equal to one
- B. **Less than one**
- C. Greater than one
- D. None of these.

Q9. Strain energy is the

- A. Proof resilience per unit volume of a material
- B. Maximum strain energy which can be stored in a body
- C. **Energy stored in a body when strained within elastic limits**
- D. Energy stored in a body when strained upto the breaking of a specimen

Q10. The moment diagram for a cantilever carrying a concentrated load at its free end

will be

- **A. Triangle**
- B. Parabola
- C. Rectangle
- D. None of the above

Q11. when a rectangular beam is loaded longitudinally shear develops on

- A. Top fibre
- B. Middle fibre
- C. Bottom fibre
- **D. Every-horizontal plane**

Q12. The point of contraflexure occurs in over hanging beams only.

- **A. True**
- B. False

Q13. Which of the following stresses are associated with the tightening of a nut on a bolt?

- A. Tensile stress due to the stretching of bolt
- B. Bending stress due to the bending of bolt
- C. Tensile stress decreases at a faster rate
- **D. Both A & B**

Q14. Strain energy of any member may be defined as work done on it to resist shortening.

- **A. True**
- B. False

Q15. The unknown element of the reactions, is for a beam having fixed ends.

- A. Vertical components at either end
- B. Horizontal components at either end
- **C. Horizontal and vertical components at both the ends.**
- D. None of the above

Q16. The materials which have the same elastic properties in all directions are called

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- A. Hard
- B. Brittle
- **C. Isotropic**
- D. Homogeneous

Q17. The point of con-traflexure occurs at a section where In a loaded beam.

- A. Shearing force is minimum
- B. Shearing force is maximum
- C. Bending moment is maximum
- **D. Bending moment is zero or changes sign**

Q18. Which of the following is a non-hookean material?

- A. Steel
- B. Copper
- **C. Rubber**
- D. Aluminium

Q19. Rankine gordon formula accounts for direct as well as buckling stress and is applicable to

- A. Short columns
- B. Long columns
- C. Very long columns
- **D. All of the above**

Q20. If a rigid body is in equilibrium under the action of three forces, then

- A. These forces are equal
- B. The lines of action of these forces are parallel
- C. The lines of action of these forces meet in a point
- **D. Both B & C**