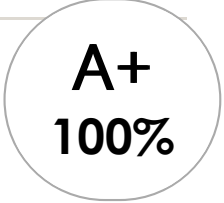


19 Multiple choice questions



A+
100%

1. a principle stating that stress is directly proportional to strain within a material's proportional limit
 - a. geotextile
 - b. **CORRECT: Hooke's law**
 - c. corrosion
 - d. compression

2. a chemical reaction that results in the conversion of metallic materials into oxides, salts or other compounds
 - a. composites
 - b. **CORRECT: corrosion**
 - c. cast iron
 - d. compression

3. a non-malleable, iron-carbon that is brittle and relatively weak in tension
 - a. elastic
 - b. asphalt
 - c. corrosion
 - d. **CORRECT: cast iron**

4. an ingredient of concrete made from calcined mixtures of clay-like and lime-bearing materials
 - a. **CORRECT: cement**
 - b. elastic
 - c. ceramic
 - d. concrete

5. an idea that guides engineers to design structures within safe limits
 - a. composites
 - b. corrosion
 - c. **CORRECT: factor of safety**
 - d. method of joints

6. a multiphase material formed from a combination of materials; remaining bonded, individual components combine to improve upon the original properties of the component materials
 - a. **CORRECT: composites**
 - b. concrete
 - c. compression
 - d. corrosion

7. material that deforms under stress but returns to its original size and shape when the stress is released, leaving no permanent deformation
 - a. glass
 - b. **CORRECT: elastic**
 - c. ceramic
 - d. cast iron

8. forces applied to an object that try to squash or reduce the object in size
 - a. composites
 - b. **CORRECT: compression**
 - c. concrete
 - d. corrosion

9. a solid which is not crystalline, characterised by certain areas of short-range order
 - a. asphalt
 - b. concrete
 - c. composites
 - d. **CORRECT: amorphous**

10. a composite material consisting of aggregates suspended in a matrix of bitumous material interspersed with air voids
 - a. amorphous
 - b. glass
 - c. **CORRECT: asphalt**
 - d. cement

11. beams anchored at only one end, allowing for overhanging structures without external bracing
 - a. concrete
 - b. elastic
 - c. **CORRECT: cantilever**
 - d. cast iron

12. a technique used for resolving forces in trusses by isolating individual joints
 - a. factor of safety
 - b. **CORRECT: method of joints**
 - c. composites
 - d. method of sections

13. a tool to support decision making for designers, engineers and manufacturers when assessing the impact of a product or process on the environment
 - a. ceramic
 - b. **CORRECT: life cycle analysis**
 - c. elastic
 - d. glass

14. ceramic produced through the fusion of inorganic materials cooled to a hard condition without any crystalline structure developing
 - a. asphalt
 - b. elastic
 - c. cement
 - d. **CORRECT: glass**

15. an approach to truss analysis isolation a section of the truss to be dealt with separately
 - a. factor of safety
 - b. corrosion
 - c. **CORRECT: method of sections**
 - d. method of joints

16. a combination of cement, fine aggregate (sand), coarse aggregate (blue metal) and water
- CORRECT: concrete**
 - composites
 - cantilever
 - cement
17. natural and synthetic materials used to create a barrier between differing layers of earthworks
- cement
 - elastic
 - ceramic
 - CORRECT: geotextile**
18. a technique used for making steel from molten pig iron and scrap
- life cycle analysis
 - CORRECT: basic oxygen steelmaking**
 - compression
 - factor of safety
19. a multi-phase material containing phases composed of compounds of metals and non-metals; typically hard and providing good insulation
- cement
 - CORRECT: ceramic**
 - elastic
 - corrosion