

All structures are created to satisfy human needs (or wants). Although each structure is designed for a very specific function the one thing that they all have in common is ...

- A. cost
- B. safety
- C. durability
- D. appearance

2.

Building components are designed to withstand more force than will normally occur or act on the structure. Unfortunately some structures fail in extreme situations because the forces acting on the structure have exceeded the structure's ...

- A. building code
- B. stability parameters
- C. margin of safety
- D. deformation threshold

3. Various tests on a structure's design are made before it is approved for use by the consumer. Consumer Product Tests ensure that a product is safe to use. The first step in the testing process is to test the product's ...

- A. components
- B. performance
- C. durability
- D. design

4. During the Ice Storm in Quebec in 1998, ice crystals formed on many structures. Some of these structures failed because the formation of ice crystals on the structure added to the structure's ...

- A. flexibility
- B. overall mass
- C. safety margin
- D. tensile strength

5. Improving designs by using different materials or incorporating new technologies can help to make a structure perform its function more effectively. One way to solve a structural problem is to combine materials and components in new ...

- A. technologies
- B. arrangements
- C. adhesives
- D. functions

6. At birth a baby has 350 bones. As the baby grows, the total number of bones in the body is reduced to 206. Nature's way of strengthening the body is to use the 144 'missing' bones to reinforce the frame by this method ...

- A. adhesive
- B. gluing
- C. fusion
- D. fastening

7. The process of forming a material into wave-like ridges or folds is called corrugation. Common examples can be found in materials such as ...
- A. cardboard boxes
 - B. drywall sheets
 - C. aluminum foil
 - D. Reinforced concrete
8. A stronger material, made by gluing layers of the same material together, is done through a process known as ...
- A. corrugation
 - B. reinforcement
 - C. lamination
 - D. papier-mâché
9. Technological advancements have led to new composite materials being developed. One such material is used in such diverse products as tires, fibre optic cables, and sporting goods. This composite material is known as ...
- A. Spider silk
 - B. Kelvar®
 - C. Fibreglass
 - D. Titanium
10. Any design can be evaluated from many different perspectives. The most common perspectives designers and engineers use include ...
- A. cost, benefits, safety, impact on the environment
 - B. materials, benefits, safety, waste production
 - C. cost, benefits, materials, aesthetics
 - D. impact on the consumer, aesthetics, safety, waste reduction
11. Rocky Mountain bicycles modified a road bike and made this in 1982. The 'Sherpa' was the first one of these produced.
- A. racing bike
 - B. all-terrain bike
 - C. motocross bike
 - D. mountain bike
12. Hollow triangle tubes are used as the traditional shapes for a bicycle. This is because they provide the best ...
- A. flexibility
 - B. ductility
 - C. strength
 - D. plasticity

13. All departments within the bicycle company, such as marketing can have access to the bicycle specifications because the company uses this for all its bike designing and manufacturing ...

- A. engineering sketches
- B. computer-aided systems
- C. digital communication
- D. audio-visual technologies

14 A radio that operates by turning a crank in the back provides enough power to last about 30 minutes. The radio operates on mechanical energy, with no need for batteries or electricity. It could become very

popular because one of its best advantages is its ...

- A. portability
- B. design
- C. cost
- D. flexibility