Trans-Tibial Socket Interface Theory Test

Instructions: Review the Trans-Tibial Interface Theory Modules (1&2). Select the best answer based on the content of the modules.

1. Which design takes advantage of a 'uniform, circumferential squeeze' to minimize distal contact?
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Hydrostatic Design
    d. A & B
    e. All of the above

2. Which design most closely approximates the distal residual limb and the interface?
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Hydrostatic Design
    d. B & C
    e. A & C

3. Compliance and hygiene are issues in a given case. Which design is most likely indicated?
    a. Specific Weight Bearing
    b. Patellar Tendon Bearing
    c. Hydrostatic Design
    d. A & B
    e. A & C

4. Which theory is most interested in creating more uniform pressure/load distribution during weight bearing?
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

5. The following is a patient's complaint; "I can feel my shin bone moving inside my leg". Which design will best alleviate this complaint?
    a. Specific Weight Bearing
    b. Patellar Tendon Bearing
    c. Hydrostatic Design
    d. Total Surface Bearing

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6. In a hydrostatic design socket, _____ is utilized to increase _____.
    a. Elongation; stiffness
    b. Pressure; total surface bearing
    c. A circumferential squeeze; distal contact
    d. Fluid; comfort
    e. Relief; comfort

7. Which patient characteristic will likely lead to failure or rejection of a hydrostatic design
    a. Decreased hygiene
    b. Decreased compliance
    c. Average musculature
    d. Typical post-operative scars
    e. Boney residual limb

8. A patient presents to clinic wearing a hard interface with no liner or insert. He is most likely wearing a _____ socket design.
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

9. A triangular shaped socket is associated with
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

10. You examine a socket and find a pin lock mechanism mounted distally. It is
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. Possibly any of the above

11. A patient presents to clinic wearing a liner that is showing some focal wear. Wear is observed primarily over the Tibialis anterior muscle and along the Medial Tibial Flare. The interface most likely has modifications for a _____ socket.
    a. Total Surface Bearing
    b. Patellar Tendon Bearing
    c. Hydrostatic Design
    d. A & C

12. Excess distal end bearing can potentially lead to
    a. Pistoning
    b. Verrucous Hyperplasia
    c. Focal liner wear
    d. Tissue elongation
    e. Tissue stiffness

13. The quantity of compression or bending resulting from external loading is representative of a material's
    a. Density
    b. Durability
    c. Stiffness
    d. Strength
    e. Strain

14. You have calculated theoretic interface to skin pressures. The design in question will theoretically yield 25 units of force over the Anterior Tibialis, 25 units over the Peroneus Longus, 5 units over the fibula head and 5 units over the Tibial crest. This interface is most likely
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

15. Mr. Smith's residual limb is rather boney and he is ectomorphic in stature. The skin on the residual limb is not mobile. There is adherent scar tissue and remnant hardware will require planned relief. To appropriately relieve for the problematic hardware you should plan to use a _____ interface.
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

16. The fact that the residual limb in the case above, is boney and because adherent scar tissue is present, which system will most likely fail
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C

17. A case requires even pressure distribution and no elongation. Which system is indicated?
    a. Specific Weight Bearing
    b. Total Surface Bearing
    c. Patellar Tendon Bearing
    d. Hydrostatic Design
    e. A & C