

**SOUND ADVICE FOR ACOUSTIC DESIGN FINAL EXAM**

1. The loss of energy occurring when sound waves contact or pass through materials is \_\_\_\_\_.
  - a. Lowered frequency
  - b. Sound absorption
  - c. White noise
  - d. Sound isolation
  
2. Structural building components pass sound through them by \_\_\_\_\_.
  - a. Allowing kinetic energy to pass through their porosity
  - b. Funneling it in through reflective surfaces
  - c. Vibrating on the opposite side from a source
  - d. Initial absorption and a delayed release
  
3. Increased density of sound batt insulation in wall cavities \_\_\_\_\_.
  - a. Increases susceptibility to moisture
  - b. Decreases acoustic absorption
  - c. Quickly becomes cost prohibitive
  - d. Helps with sound, but creates concerns with HVAC zoning
  
4. If \_\_\_\_\_ can pass through a gap, so can sound
  - a. X-rays
  - b. Light
  - c. Impact noise
  - d. Vibration
  
5. Reverberation Time (RT) is defined as the time it takes for an audible sound to diminish by how many decibels, once it has been created?
  - a. 35
  - b. 120
  - c. 80
  - d. 60
  
6. The Federal Agency that publishes noise standards for highways is \_\_\_\_\_.
  - a. OSHA
  - b. EPA
  - c. FHWA
  - d. DOT

7. When a deck above has been treated for sound absorption, speakers generating sound masking noise should be mounted at ceiling level and aimed \_\_\_\_\_ .
- Up at the deck
  - Down at users
  - In the direction of noise generators
  - Horizontally along the ceiling surface
8. The frequency of masking sounds should be \_\_\_\_\_ .
- Slightly higher than the mid-range of the hearing frequency
  - Near the lower end of the range of the hearing frequency
  - In the ultrasonic range, not actually detectable by the human ear
  - Constantly modulating through the spectrum of the hearing frequency
9. Recommended Reverberation Time (RT) for meeting or conference rooms is \_\_\_\_\_ .
- Between 0.4 - 1.2 seconds
  - Between 0.6 - 1.2 seconds
  - Between 0.6 - 1.0 seconds
  - Between 0.4 - 1.0 seconds
10. Sound absorption is always \_\_\_\_\_ .
- Increasingly expensive
  - Desired
  - Occurring at some level
  - Frequency dependent
11. The two characteristics by which sounds are measured, are \_\_\_\_\_ and \_\_\_\_\_ ?
- Single-source, multi-source
  - Loudness, pitch
  - Exterior, interior
  - Music, voice
12. It is recommended that noise used for sound masking purposes mimic a normal building sound, such as \_\_\_\_\_ .
- Sound of an HVAC system
  - Audible horns from an alarm system
  - Steam from a radiator relief valve
  - Exterior traffic noise
13. The only occupancy type, for which the IBC currently lists a noise requirement, is \_\_\_\_\_ .
- Residential
  - Educational
  - Factory
  - Medical

14. An STC rating of \_\_\_\_\_ must be achieved before a partition is considered high performance, acoustically.
- 35
  - 42
  - 48
  - 55
15. In some cases, replacing wood studs in a wall assembly with flimsier metal studs, will result in \_\_\_\_\_.
- Reverberation like from a drumhead
  - Better STC ratings
  - Substantial cost savings
  - A need for foamed-in-place insulation
16. What is created, when vibrations are induced in one material struck by another object, travel through that material, and cause air on the other side to vibrate, is referred to as \_\_\_\_\_.
- Noise nuisance
  - Lag time
  - Reverberation
  - Impact noise
17. The time interval, between the waves of air pressure of a sound, is not only described as frequency, but also as \_\_\_\_\_.
- Pitch
  - Falsetto
  - Degree of escalation
  - Time signature
18. Which of the following is a very poor blocker of sound?
- Fiberglass insulation
  - Heavy concrete walls
  - Earth berms higher than a sound source
  - Glass windows
19. Panels of acoustic absorbing material, hung below ceilings to dampen sound, are called \_\_\_\_\_.
- Deflectors
  - Clouds
  - De-energizers
  - Acoustic focus
20. Adding a second layer of drywall to each side of a partition, that already has an STC rating of 39, will increase the STC rating for the partition to \_\_\_\_\_.
- 41
  - 55
  - 57
  - 61

21. \_\_\_\_\_ can be used to allow movement between roofing and structure, to absorb some kinetic energy from sound trying to transfer through.
- Metal roofing
  - Bushings
  - Seam covers
  - Isolation clip
22. The sound rating of any wall assembly become irrelevant if \_\_\_\_\_ .
- A door is left open
  - The wall becomes wet during flooding
  - There is visual access into the space
  - Noise on one side becomes amplified
23. A device typically receiving signals from an output channel on an amplified sound mixing board, would be \_\_\_\_\_ .
- Monitor
  - Multimedia player
  - Singer
  - Microphone
24. The goal in the acoustic design of a recording studio is \_\_\_\_\_ .
- Total acoustic isolation
  - Control of sound generated inside
  - Control of reverberation time inside
  - All of the above