Speech Perception in Classroom Acoustics by Children with Cochlear Implants and with Typical Hearing - Questions

1. Reverberation time (RT) is:
   A) The time in seconds for a sound in a room to decrease in energy 60dB after sudden termination
   B) The time in seconds for a sound in a room to decrease in energy 50dB after sudden termination
   C) The time in seconds for a sound in a room to decrease in energy 60dB after gradual termination
   D) The time in seconds for a sound in a room to decrease in energy 40dB after sudden termination

2. The SNR-50 scores for children with cochlear implants were:
   A) Significantly lower in post hoc analysis, compared to children with typical hearing
   B) Significantly higher in post hoc analysis, compared to children with typical hearing
   C) The same in post hoc analysis, compared to children with typical hearing
   D) Slightly lower in post hoc analysis, compared to children with typical hearing

3. The decrease in SNR-50 scores with a reduction in classroom RT, from 0.9 to 0.6 to 0.3 s, was negligible in post hoc analysis for children with cochlear implants.
   A) True
   B) False

4. In participants with typical hearing, this decrease in score for RT was significant in post hoc analysis:
   A) 0.6 – 0.3 s
   B) 0.9 – 0.3 s
   C) 0.9 – 0.6 s
   D) All of the above

5. In participants with typical hearing, the differences in scores in post hoc analyses between the sound booth and each of the three classroom RT’s were all significant.
   A) True
   B) False

6. Children with cochlear implants, compared to children with typical hearing, performed significantly poorer in SNR-50 scores by more than:
   A) 10dB in each classroom and 10DB SNR in the sound booth
   B) 10dB in each classroom and 7.9DB SNR in the sound booth
   C) 7.9dB in each classroom and 10DB SNR in the sound booth
   D) 7.9dB in each classroom and 7.9DB SNR in the sound booth

7. The performance gap for children with cochlear implants closed only in high SNRs in the shortest classroom RT, supporting the findings of previous research that children with hearing loss benefit from:
   A) Low RT’s
8. The American Speech-Language-Hearing Association (2016) recommended SNRs above:
   A) 15dB
   B) 10dB
   C) 5dB
   D) 20dB

9. There was no correlation for the group with cochlear implants between age and any of the mean SNR-50 scores in the three classroom RTs:
   A) True
   B) False

10. In the study by Neuman et al., listeners with typical hearing may have lost acoustic details otherwise perceptible in the room environment. These include:
    A) Spatial separation of speech and noise sources
    B) Potential head shadow
    C) All of the above
    D) None of the above

11. American standards for RT in classrooms ANSI/ASA S12.60-2010/Part 1, are:
    A) RT not higher than 9 s
    B) RT not higher than 3 s
    C) RT not higher than 0 s
    D) RT not higher than 6 s

12. When compared to performance in the sound booth, children with cochlear implants performed significantly poorer in:
    A) Classrooms with RT of 0.9 s
    B) Classrooms with RT of 0.6 s
    C) Classrooms with RT of 0.3 s
    D) None of the above

    A) True
    B) False

14. The author of this study used the BKB-SIN test, because:
    A) Multi talker babble better represents classroom noise
    B) A range of SNRs common to classrooms is used
    C) It contains a sufficient quantity of sentence lists
    D) All of the above

15. In order to yield a more complete understanding of speech perception in the classroom, the author suggests that future studies could include the beneficial effects of:
    A) Speech reading
    B) Visual clues
16. The results of this study should be interpreted with caution because the BKB-SIN test:
   A) Was validated for use with noise, but not with noise and reverberation
   B) Was validated for use with reverberation and noise
   C) Was validated for use with reverberation
   D) None of the above

17. Several of the test conditions in this study did not represent a classroom of children. It included:
   A) Noise levels that were fluctuating
   B) Noise of consistent spectrum and RT
   C) Changes in listening position
   D) All of the above

18. FM systems can help improve speech perception in noise by reducing the functional distance between talker and listener.
   A) True
   B) False

19. Limitations of FM systems are.
   A) Access only to the talker with the microphone
   B) Reliability of the electronics
   C) All of the above
   D) None of the above

20. The findings suggest that clinical results obtained in a non-reverberant test environment may:
   A) Overestimate speech perception abilities of children with normal hearing
   B) Overestimate speech perception abilities of children with cochlear implants in the classroom
   C) All of the above
   D) None of the above