Week 5: Techniques/process of virtual ergonomics evaluation using DHMs

1. 95\textsuperscript{th} percentile bi-deltoid breadth of the population with an additional allowance of 10% on each side is considered for evaluation of __________
   Answer: Lateral clearance.

2. Which of the following is the most comfortable viewing angle (for placement of most frequently required displays)?
   Answer: 15 degree below eye level.

3. Where should we keep our most frequently used objects/things for easy access and handling?
   Answer: First horizontal reach zone of work-surface.

4. The size/extent of the horizontal binocular field of view for human eye is __________
   Answer: 120 degree.

5. Extent of monocular field of view is __________ than binocular field of view
   Answer: Larger.

6. Volume of ‘arm reach envelop is __________ the volume of ‘arm comfort zone’.
   Answer: Greater than.

7. To visualize any target beyond 80 degree view cone around the line of sight, there is requirement of __________.
   Answer: Neck and eye movement.

8. __________ degree view cone below eye level is considered as comfortable while frequent changes of gaze between two equally important visual targets are equally critical.
   Answer: 30.

9. Comfort/discomfort evaluation for a particular posture is a __________ measure in case of virtual ergonomics evaluation using DHM software.
   Answer: Subjective.

10. In a seated posture, head and neck are generally at __________ forward tilt angles from an erect vertical upright head position.
    Answer: 10\textdegree-13\textdegree.

11. RULA grand score of 5-6 indicates that postural load is Acceptable
    Answer: Investigate further and change soon.

12. Comfortable viewing distance is __________ away from eyes for visual display based work.
    Answer: 46.0-76.0 cm.
13. ‘None of the important displays is positioned within blind spot zone of pilot’s vision’ - this statement is _________.
   Answer: Correct.

14. ‘Comfort range of motion for various body joints varies according to the posture’ - the statement is _________.
   Answer: Correct.

15. How many action categories are there in OWAS method?
   Answer: 4.

16. Comfort discomfort analysis using DHM is dependent on _________.
   Answer: Body joint angle data.

17. ‘Comfort database for driving posture is also applicable for postural comfort evaluation of any industrial workplace’ - the statement is _________.
   Answer: Incorrect.

18. ‘Angular limit or range of motion data for body joints may vary from individual to individual’ - the statement is _________.
   Answer: Right.

19. Compressive forces (generated in L4-L5 lumbar spine) have an allowable/ safe limit of _________. as recommended by NIOSH.
   Answer: 3433N.

20. Which of the following is not a postural load analysis tool?
   Answer: RUBA.

21. Visual targets within a visual angle of < 30°, there are rarely eye movements. This 30 degree viewing area around line of sight is known as
   Answer: Eye field.

22. Higher grand score in postural load analysis is an indication of _________.
   Answer: Discomfort.

23. ‘Effect of load handling is not considered in calculation of postural score in RULA method’ - the statement is _________.
   Answer: Incorrect.

24. Is it possible to identify the area/ zone, which is visually obstructed / obscured by an object in virtual environment, using DHM software?
   Answer: Yes.

25. If supplementary eye movement is required to visualize an object, the view field is known as
   Answer: Eye field.