Week 4 assignment solution: Basic functionalities of DHM software and advantages of DHM approach for virtual ergonomics

1. Development of 'Santos software package' was funded by _____ .
   Indian Army
   Answer: US Army.

2. DHM is the attempt to represent the complex human being digitally in both the _____ & _____ aspect.

   Answer: Physical & cognitive.

3. Physical DHMs are of two types. These are---------------
   Answer: Biomechanical & 2D or 3D structural.

4. _____ is the simulation of human behavioral aspect, artificial intelligence, interactivity of synthetic agents, etc.

   Answer: Performance DHM.

5. _____ is an example of Cognitive DHM

   Answer: Performance Visualization System (PVS).

6. Initially DHMS developed as _____ figures.

   Answer: Stick.

7. _____ was the first commercial DHM software.

   Answer: First man.

8. 'In 1959, DHM was used to assess pilot accommodation in the cockpit of an airplane'- this statement is _____

   Answer: Correct.

9. Which was the first DHM software developed by automobile manufacturer, Chrysler corporation for their in house design and evaluation of automobiles?

Answer: CYBERMAN.

10. Computerized Biomechanical Man Model 'COMBIMAN' (later 'CREW CHIEF') was developed by University of Dayton was developed in early -----------
Answer: 1980s.

11. 'H-point and Accelerator Heel Point (AHP) are the same reference point' -this statement is --------------------------
 Answer: Incorrect.

12. Which software was initially known as "Tempus" & funded by NASA & US Army?
Answer: JACK.

13. RAMSIS is acronym of _____

Answer: Realistic Anthropological Mathematical System for Interior Comfort Simulation.

14. _____ is also one of the DHM software for evaluating the lifting, lowering, pushing and pulling weight limits suggested by NIOSH.

Answer: SAFEWORK.

15. One of the powerful capabilities of -----------------------software is to plot force, displacement, velocities, acceleration, torques and angles.

Answer: LiFeMOD.

16. _____digital human model can be composed of more than 500 individual muscle units

Answer: Anybody.

17. _____ DHM represents realistic skin deformation and contracting muscles

Answer: Santos.

18. What is the basic functionality of all DHM software?

Answer: Interfacing virtual human model with product/workstation model.

19. Can we manipulate/change the limit of range of motion for manikin/DHM?
    Answer: Yes.

20. SRP is acronym of_____

    Answer: Seat Reference Point.

21. DEP is acronym of _____

    Answer: Design Eye Point.

22. Jack digital human modeling software was developed by
    Answer: University of Pennsylvania.

23. Which of the following reference points is used for positioning digital manikin on aircraft pilot seat?
    Answer: DEP.

24. 'Clash/ Collision detection' tool of DHM software is useful for ----------   .
    Answer: Clearance/ interference analysis.

25. H-point machine is required by -----------------------
    Answer: Automobile manufacturer