

Week 3 Assignment solution: Physical ergonomics vs. virtual ergonomics

1. Major components of optical projections are.....

Answer: Centre of projection (CP), Projectors, Projection Plane (PP) & Principal Axes.

2. Projections can be broadly categorized as parallel projection and -----

Answer: Perspective projection.

3. Parallel projections are categorized as _____

Answer: Orthographic projection, Oblique projection & axonometric projection.

4. Which of the following is not a characteristic of perspective projection?

Answer: Distance between Centre of projection (CP) and projection plane (PP) is infinite.

5. Projection Plane is parallel to one of the principal axis. This is the characteristic of -----

Answer: Orthographic projection.

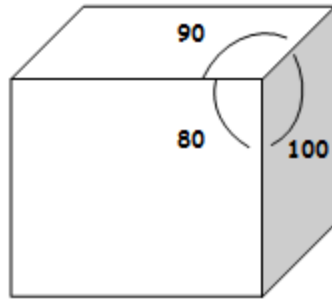
6. In case of _____, parallel projectors are inclined to projection plane at an angle other than 90 degree and one of the principal axes is parallel to projection plane.

Answer: Oblique projection.

7. What are the types of axonometric projection?

Answer: Trimetric, Dimetric & Isometric.

8.



What kind of axonometric projection is represented by this image?

Answer: Trimetric.

9. Depth lines of the projected image are converged at _____ point

Answer: Vanishing.

10. In perspective projection, _____ point is the eye of the observer at the viewing point.

Answer: Station.

11. Virtual Environment means _____ environment

Answer: Computer Graphics.

12. Simulation is defined as creating similar environment, process, methods etc. It is categorized as -----

Answer: Physical and virtual.

13. DHM is the _____ tool for construction of 2D & 3D human model from anthropometric and biomechanical data for ergonomic analysis of virtual Human fit.

Answer: CAD.

14. _____ has the potential to enable engineers to incorporate ergonomics principles earlier in the design process

Answer: DHM.

15. Which of the following is not the advantage of using DHM software?

Answer: Requirement of physical mock-up.

16. 'DHM has the potential to evaluate the hazardous and inaccessible workplace'- the statement is-----

Answer: Correct

17. Accommodating _____ of user population for any particular product/facility is a challenging job to ergonomist.

Answer: Varying anthropometry.

18. Distance between Centre of projection (CP) and projection plane (PP) is finite in case of

Answer: Perspective.

19. Virtual reality is defined as 3D Computer graphics (CAD) environment where real human being can interact intuitively with that environment and he has the feeling of -----
----- in that environment.

Answer: Immersion.

20. DHM software does not help in _____.

Answer: Repeated trial and modification of physical products/mockups.

21. Digital human modeling is the process of creating -----
representation of human body form.

Answer: Virtual.

22. 'DHM facilitate repeated trial of man-machine interface by incurring extra time, material and cost'- the statement is-----

Answer: Misleading.

23. Which of the following statement is correct?

Answer: DHM reduces the requirement of physical mock-up testing with real human.

24. -----is defined as "a 2D or 3D graphical computer representation of the human body based on anthropometric measurements, link and joint structure, and movement characteristics

Answer: DHM

25. Which of the following is not a DHM software?

Answer: AnyMan.