1. Define computer animation and discuss its significance in modern multimedia applications.
2. Explain the principles of keyframe animation and provide examples of keyframe interpolation techniques.
3. Explain the process of texture mapping in computer animation. How does texture mapping contribute to the visual realism of rendered scenes?
4. Explain the principles of physics-based animation and how they are applied to simulate realistic motion in computer-generated characters and objects.
5. Discuss the importance of timing and spacing in creating believable animations. How are these principles applied in both hand-drawn and computer-generated animations?
6. Describe the concept of interpolation in computer animation. Explain the differences between linear interpolation and spline interpolation, and provide examples of situations where each is used.
7. Describe the process of rasterization in computer graphics and its role in rendering animations.
8. Discuss the differences between 2D and 3D computer animation techniques, highlighting their respective advantages and limitations.
9. Compare and contrast forward kinematics and inverse kinematics in character animation. Illustrate with examples how each technique is implemented.
10. Discuss the concept of rigging in computer animation. Explain the importance of skeleton rigs and skinning in character animation.
11. Discuss the challenges of simulating realistic cloth and hair dynamics in computer animation.
12. Describe algorithms and methods used to achieve convincing cloth and hair movement in animated characters.
13. Define the concept of motion capture in computer animation. Discuss its applications and limitations.
14. Explain the concept of shaders in computer animation. How do shaders contribute to achieving realistic lighting and visual effects in rendered animations?
15. Write short note on different modern tools used in different application domains of computer animation.