Fundamentals of Computer Graphics

List of exam question topics

1. Perspective projection, pin hole camera model, camera transformations, building MVP matrix, normal matrix.
2. Description of OpenGL API, buffers, textures, programmable shaders, GLSL.
3. Options for representing 3D meshes in computer graphics, Manifold meshes, Euler characteristic.
4. Affine and projective space, transformations, basic operations (matrix-vector multiplication, dot-product, cross-product, projection, normalization).
5. Phong reflection model, material parameters.
6. Color spaces, sRGB vs RGB, color gamut, gamma correction, tone mapping (HDR vs LDR).
7. Normal mapping, TBN, G-S orthogonalization process.
8. Shadow mapping.