CSCI 441 – Fall 2023
Sample Exam II Questions / Review

1. What information can be learned from the dot product of two vectors?
   Cross product?
   What are the equations for each?

2. What is the Blinn-Phong Illumination Model?
   What is Gouraud Shading?
   What is Phong Shading?

3. What happens at each stage of the OpenGL 4.1 Rendering Pipeline?
   What is the input/output of each stage?
   Which stages are programmable?
   Which stages are required?
   Which stages are optional?
   How do these stages affect the rendering performance of each frame?

4. What are some examples of vertex shader techniques?
   What are some examples of tessellation shader techniques?
   What are some examples of geometry shader techniques?
   What are some examples of fragment shader techniques?
   How does each affect our geometry and our framebuffer?

5. How do we properly render transparent objects?

6. Why do we need to filter textures when sampling them?
   What are the different options available?
   How does a mipmap apply?

7. How do we evaluate a Bézier Curve?
   Bézier Surface?
   What are uses for each?
   Why would we want to use each?
   Why should we consider using arc length parameterization?

8. What is billboarding?
   How is it performed?
   Why is it used?

9. How do we represent a particle system?
   How do we represent each particle?
   How do we move particles within the system?
   How do we draw each particle?