Total number of printed pages: 01 **B. Des. (UG)/6th Semester/UMCD602**

2025

Computer Generated Lighting and Rendering

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

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1. a. Explain the differences between *area lights* and *spot lights* in 3D lighting. What are the unique features of each, and in which types of scenes are they most effectively used? Support your answer with examples. ***4+4+2=10***

b. What is a lighting pass in 3D rendering? Discuss the functions of various lighting passes and how they enhance both the efficiency and quality of the rendering workflow. ***2+4+4=10***

2. a. What is *Atmosphere Volume* in 3D lighting? Explain its role in creating different environmental effects within a 3D scene. ***4+6=10***

b. What is *Skydome Light*? Describe the advantage and disadvantages of using Skydome Light to create any 3D scene. ***2+8= 10***

3. a. Explain the function of the *Physical Sky light* in 3D lighting. Describe its key attributes in detail, supported by appropriate illustrations. ***4+6=10***

b. What does the term *light filter* refer to in Autodesk Maya? Describe the various light filters and their respective functions in the context of lighting a 3D scene. ***2+8=10***

4. a. What is *photometric light*, and how does it differ from other light types in Maya? How does photometric lighting enhance visualization in 3D interior design? ***2+4+4=10***

b. What are *Light Blockers* and *Light Decay* in 3D lighting? Explain the purpose and functionality of each in the lighting workflow. ***4+6=10***

5. a. Explain the relationship between 3D *texturing* and *lighting*. How does lighting enhance texturing and animation, and contribute to the overall quality of storytelling? ***4+6=10***

b. How does CGI lighting interact with *materials*? Provide examples of how materials respond to various lighting conditions, referencing their properties. ***4+6=10***

6. Write all the short notes *(Each carrying 5marks)* ***5x4=20***

a. Ai Gobo.
b. Photometric Light.
c. Ai Atmosphere Volume
d. Light Filters.

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