BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(AM)-Hons-2022
Course Name – Cinematic 3D Lighting and FX
Course Code - BMMD501B
(Semester V)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Choose the component of shading responsible for defining how light interacts with the surface of an object.
a) Ambient Occlusion b) Texture Map
c) Shader d) Normal Map

(ii) Choose the advanced UV layout technique used to minimize texture distortion on complex models.
a) Lattice UV Mapping b) Cylindrical Mapping
c) Unwrapping d) Automatic Mapping

(iii) Choose the Arnold render setting that directly impacts the quality of shadows.
a) Diffuse Sampling b) Ray Depth
c) Shadow Density d) Transmission Sampling

(iv) Choose the appropriate use of the BOSS system in Maya.
a) Simulating ocean surfaces b) Generating terrain
c) Creating soft body dynamics d) Emitting fire and smoke

(v) Identify the function of the Dynamic Constraints in nCloth simulations.
a) To bind nCloth to specific points on the mesh b) To limit the stretchiness of nCloth
c) To prevent nCloth from tearing d) To create a wind effect

(vi) Identify the tool used to simulate rigid body dynamics in a chain reaction.
a) Soft Body Tool b) nCloth Tool
c) Active Rigid Body Tool d) Passive Rigid Body Tool

(vii) Select the attribute that influences the stretchiness of an nCloth object.
a) Bend Resistance b) Stretch Resistance

c) Shear Resistance d) Thickness

(viii) Select the correct method to add foam to an ocean simulation.

a) Enable Foam Attribute in Ocean Shader b) Use Particle System
c) Use Fluid Container d) Apply Foam Texture

(ix) Choose the effect of increasing the resolution in a Fluid 3D Container.

a) Increases the detail of the simulation b) Slows down the simulation
c) Speeds up the rendering d) Reduces the detail of the simulation

(x) Choose the option that defines the use of a 'Time Scale' attribute in fluid simulations.

a) Controls how fast or slow the simulation runs b) Adjusts the simulation start time
c) Rescales the fluid grid d) Alters the simulation duration

(xi) Choose the correct workflow for creating realistic cloth tearing effects in NCloth.

a) Use Tearable Surface attribute b) Increase Stretch Resistance
c) Add More Subdivisions d) Use High Damping values

(xii) Select the method to simulate dynamic hair interactions with objects in Maya using NHair.

a) Parenting Hair to Object b) Using Collision Events
c) Applying Rigid Body Dynamics d) Using nConstraints

(xiii) Choose the function of the 'Stretch Damp' attribute in NCloth simulations.

a) Controls Cloth Tearing b) Reduces Stretching
c) Increases Stretch Resistance d) Increases Compression Resistance

(xiv) Select the type of render setting that affects global illumination.

a) Diffuse Setting b) GI Settings
c) Reflection Settings d) Glossiness Setting

(xv) Choose the correct usage of the 'Adaptive Sampling' feature in rendering.

a) To save memory b) To reduce noise
c) To speed up rendering d) To improve texture quality

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Name the tool used to create hair simulations in Autodesk Maya. (3)
3. Define the concept of cinematic lighting in CGI. (3)
4. Define a Rigid Body in the context of Maya dynamics. (3)
5. Name the attribute that controls the resolution of a Fluid 3D Container in Maya. (3)
6. Differentiate between Free Camera and Target Camera. (3)

OR

Analyze how render settings impact final output quality. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Describe the process of using nCloth in Maya to simulate a piece of fabric that responds dynamically to wind and gravity. (5)
8. Write a detailed explanation of how displacement mapping is implemented in Maya and its benefits for enhancing model detail. (5)
9. Analyze the role of different light types in Arnold for creating realistic cinematic lighting in Autodesk Maya. (5)
10. Describe the process of setting up a collision between NParticles and a rigid body in Maya. (5)

11. Describe how the BOSS system can be used to simulate large-scale water effects in Maya, and its advantages over other methods. (5)
12. Explain the role of the Buoyancy attribute in Fluid 3D Containers in Maya. (5)

OR

Explain the advantages of using Bifrost for simulating complex fluid interactions in Maya. (5)

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