Total No. of printed pages = 7

CG LIGHTING AND RENDERING

(New Course)

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

Illustrate your answers with suitable sketches and
examples wherever necessary.

PART – A
All questions are mandatory.

1. Fill in the blanks :   1×15=15

    (a) The innermost and darkest part of a shadow
        is called _____ .

    (b) The most commonly used colour wheel has
        _____ colours.

    (c) The colour wheel is based on the
        _____ colour model.

[Turn over

(d) Combination of primary and secondary colours create _____ colours.

(e) Tints are created by adding _____ to a specific colour or hue.

(f) Tones are created by adding _____ to a specific colour or hue.

(g) Hue or name of the colour is the _____ of light.

(h) The strength or purity of a colour is known as _____.

(i) Luminosity is referred to as the _____ of light.

(j) _____ are cut-outs which lighting technicians use in front of a light to create interesting shadow effects.

(k) By default, the value of a Spot Light's Cone Angle is _____.

(l) Increasing the value of _____ attribute in *Depth Map Shadow* will soften the shadow.

(m) Out Colour attribute is found in a _____ shader.

(n) The default Render layer in Autodesk Maya is called _____.

(o) Rim Light is also known as _____.

2. Choose the correct answer from the following questions : 1×10=10

(a) Which artificial light in Autodesk Maya is capable of recreating illumination similar to a light bulb ?

(i) Dim Light   (ii) Volume Light

(iii) Key Light   (iv) Point Light

(b) In a Volume Light, which light shape is not available ?

(i) Sphere   (ii) Cube

(iii) Cylinder   (iv) Cone

(c) Depth Map Shadow attribute is absent in :

(i) Area Light

(ii) Volume Light

(iii) Directional Light

(iv) Ambient Light

(d) Which artificial light in Maya does not have the Emit Specular attribute ?

    (i)   Volume Light

    (ii) Area Light

    (iii) Ambient Light

    (iv) Point Light

(e) Apart from Ambient Light, which other light does not have Light Effects attributes?

    (i)   Area Light

    (ii) Volume Light

    (iii) Directional Light

    (iv) Spot Light

(f) The Bounding Box feature is located under :

    (i)   View tab   (ii) Shading tab

    (iii) Lighting tab   (iv) Show tab

(g) What are the key combination to create shortcut icons of various attributes or objects on a Shelf in Autodesk Maya ?

    (i)   Ctrl + Alt + Middle Mouse Button

    (ii) Ctrl + Shift + Left Mouse Button

    (iii) Ctrl + Alt + Left Mouse Button

    (iv) Ctrl + Shift + Middle Mouse Button

(h) Hypershade is located under :

    (i)   Window > General Editor

    (ii) Window > Attribute Editor

    (iii) Window > Rendering Editor

    (iv) Window > Animation Editor

(i) Decay rate is absent in :

    (i)   Point Light

    (ii) Area Light

    (iii) Volume Light

    (iv) Spot Light

(j) The default image size resolution in Render Settings of Autodesk Maya is :

(i) 320 × 240

(ii) 640 × 480

(iii) 800 × 600

(iv) 1024 × 800

PART – B

Answer any *three* questions.

3. (a) What are the different types of artificial lights in Autodesk Maya ? Explain with examples.

3+2=5

(b) Describe any five attributes of a spot light.

5×2=10

4. (a) Describe three-point lighting technique with detailed diagrams. 10

(b) What do you understand by decay in lighting ? 5

5. (a) What are the differences between Depth Map Shadows and Raytrace Shadows ? Which is expensive and why ? 5+5=10

(b) What is incandescence and where are they applied ? 5

6. (a) Explain Rendering in Layers and Rendering in Passes. 5

(b) Why are Render Passes important in lighting ? 5

(c) Why is an RGB Matte Pass required ? 5

7. (a) What are the differences between Maya Software Renderer and Mental Ray Renderer ? 10

(b) What are steps to enable Mental Ray plugin in Autodesk Maya ? 5