

Total No. of printed pages = 7

AMT-502/CGL/5th Sem(Old)/2017/N

CG LIGHTING

(Old 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

1. Fill in the blanks : 1×15=15
- (a) The region where some or all of the light source is obscured is called _____.
- (b) The most commonly used colour wheel has _____ colours.
- (c) White, black and grey colours are considered to be _____.

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- (d) Combination of primary and secondary colours create _____ colours.
- (e) Shades 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) Light particles in Maya are called _____.
- (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) Light patterns created due to reflection and refraction of light falling on a liquid body is called _____.
- (o) Rim Light is also known as _____.

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

- (a) Which of the following is a warm colour ?
- (i) Indigo (ii) Orange
- (iii) Violet (iv) Blue
- (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) Which attribute needs to be switched off to create a Specular Pass ?
- (i) Illuminates by Default
 - (ii) Emit Specular
 - (iii) Emit Diffuse
 - (iv) None of the above.

PART - B

Answer any *three* questions.

3. (a) Why is lighting important in the field of 3D animation ? 5
- (b) How can you differentiate between natural lighting and CG Lighting ? 4
- (c) Describe any three attributes of a spot light. $3 \times 2 = 6$
4. (a) Describe three-point lighting technique with detailed diagrams. 10
- (b) What is *Indirect Illumination* ? 5

5. (a) What are the different types of shadows used in Maya CG Lights ? Explain them with examples. 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) What is a Z-Depth Pass and why is it 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