

8. (a) What is authoring tool ? What are the salient features of a good authoring tool ? Illustrate how an authoring tool helps in creating multimedia application. 10
- (b) Why digital video/audio is preferred over analog video/audio ? Illustrate. 6

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**MCA 3rd Semester (with Old Notes)**

**Examination – December, 2016**

**COMPUTER GRAPHICS & MULTIMEDIA**

**Paper : MCA-301**

*Time : Three Hours ]*

*[ Maximum Marks : 80*

*Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note : Attempt five questions in all by selecting at least one question from each Unit. All questions carry equal marks.*

**UNIT – I**

1. (a) What do you understand by a Graphics Software ? What are salient features of a good Graphics Software ? Explain. 8
- (b) What is Computer Graphics ? State its classification(s) and outline the differences among these along with their application areas. 8

2. Differentiate between the following :

- (a) LCD and Plasma Display Systems. 8
- (b) Raster Scan and Random Scan Systems. 8

**UNIT - II**

3. (a) What is anti-aliasing ? How is it achieved ?  
Illustrate its significance. 6

(b) What is Scan-Conversion ? What steps are required to plot a line whose slope is between 0 and 45 degree using Bresenham's method ? Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from screen coordinate (4, 6) to screen coordinate (14, 10). 10

4. (a) How Flood-fill algorithm is different from Boundary-fill algorithm ? Illustrate. 7

(b) What is mid-point circle drawing algorithm ? Implement this algorithm for drawing a circle with radius,  $r=10$  and centre as (0, 0). 9

**UNIT - III**

5. (a) Perform a  $45^\circ$  rotation of triangle A(0, 0), B(1, 1), C(5,2) : 8

(i) About the origin

(ii) About P (-1, -1)

(b) What do you understand by Composite Transformation ? Illustrate the concept by taking a suitable example of your choice. 4

(c) What is meant by distortion ? How can distortion be removed in viewing transformation ? 4

6. (a) Given points  $P_1(1, 2, 0)$ ,  $P_2(3, 6, 20)$ , and  $P_3(2, 4, 6)$  and a viewpoint  $C(0, 0, -10)$ , determine which points obscure the others when viewed from C. 6

(b) What is Sutherland-Cohen Clipping Algorithm ? Illustrate the same through an example. 5

(c) Differentiate Normalized-, World-, and Physical Device-Coordinates. 5

**UNIT - IV**

7. (a) What do you mean by multimedia ? What are important multimedia components ? Discuss role of each component. 8

(b) What is animation ? What are different types of animation ? Discuss their pros and cons. 8