Department of Computer Science.
Islamiah College (Autonomous).

Question Bank

Computer Graphics and Multimedia

for
III B.Sc.,/B.C.A
Third Year – Sixth Semester

(337 Questions)

Unit	Part-A	Part-B	Part-C	
I	20	19	15	
II	18	18	31	
III	17	13	16	
IV	11	18	17	
V	50	45	29	
Total Questions	**116**	**113**	**108**	**Grand Total 337**

Unit I Part A (2 Marks)

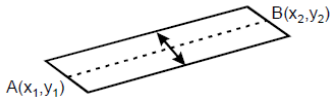
1. What are the components of CRT?
2. Define (i) aspect ratio (ii) resolution?
3. What are output primitives?
4. What is persistence?
5. Define pixel and frame buffer?
6. What is random scan system, raster scan system?
7. What is the role of video controller in raster scan system?
8. How the graphic software is classified?
9. What are the different forms of line equation?
10. For a line of slope less than 1, how subsequent *y* values are calculated for incremental *x* values?
11. Define the conditions that identifies a point as inside or outside a circle.
12. List out some hard copy devices used in Graphic system.
13. Define inquiry functions.
14. Classify logically, the input devices used in a Graphics system.
15. List out the interactive picture construction methods used.
16. Define Random and Raster scan display.
17. Describe operating characteristics of raster system & vector system.
18. What is the role of shadow masks in graphics monitors?
19. How is color depth and resolution of an image related to the video memory requirement?
20. What is the drawback of DDA line generation algorithm and advantage of Bresenham line algorithm?

Unit I Part B (5 Marks)

1. How does a raster scan system function?
2. How a line is generated using DDA algorithm?
3. Digitize a line between two points (3, 5) and (13, 9) using DDA line generation algorithm.
4. Digitize a line between (20, 10) and (35, 18) using Bresenham line generation algorithm.
5. Write down the conditions for selecting the next pixel during line and circle generation.
6. Generate a circle of radius 13 about origin using Bresenham circle generation algorithm.
7. Write on all interactive picture construction techniques.
8. What is computer graphics? Indicate five practical applications of computer graphics.
9. Discuss how world to screen coordinate mapping happens.
10. Explain in brief image formation methodologies.
11. What is RGB color model? Explain.
12. Define i) Pixel ii) Rasterization iii) Vector system vi) Image depth
13. If a monitor screen has 525 scan lines and an aspect ratio of 3:4 and if each pixel contains 8 bits worth of intensity information, how many bits per second are required to show 30 frames each second?
14. Draw a neat block diagram, to explain the architecture of a raster display.
15. Give the logical organization of the video controller in a raster display system.
16. List the operating characteristics and some applications appropriate for the following display technologies: raster refresh systems, vector refresh systems.
17. Bresenham's line drawing algorithm uses integer arithmetic. What is the justification for this approach?
18. Compare the advantages and disadvantages of the Bresenham's line drawing algorithm with those of the DDA algorithm.
19. Explain DDA line algorithm. How DDA differs from Bresenham's line algorithm?

Unit I Part C (10 Marks)

1. Discuss in brief different interactive picture construction techniques.
2. Explain how a line is generated using DDA algorithm and hence generate a line between (20, 10) and (30, 18).
3. Bring out the need for a color look-up table. Give the organization of a color lookup table providing 12 bits per entry, per color for each pixel position and with 8 bits per pixel in the frame buffer.
4. Explain how rasterization accuracy is preserved despite use of integer arithmetic.
5. Develop the integer version of Bresenham's line drawing algorithm for lines in the third quadrant.
6. State the reason why we prefer unit *x* interval or unit *y* interval for corresponding slopes $m \leq 1$ and $m \geq 1$ in line drawing algorithms.
7. It is desired to draw a line starting at A(3,6) and ending at B(6,2) on a graphics monitor. Use generalized Bresenham's algorithm to determine the pixels that would be put ON.
8. Develop an algorithm to draw a thick line from point A(*x1, y1*) to point B(*x2, y2*) of thickness '*w*' pixels.



9. Modify Bresenham's line generation algorithm so that it will produce a dashed line: the dash length should be independent of slope.
10. A line will be drawn from *(x1, y1)* to *(x2, y2).* Scan conversions are started from both *(x1, y1)* to *(x2, y2)* and also from *(x2, y2)* to *(x1, y1)* simultaneously following Bresenham's algorithm.
    (i) Write algorithm steps for such implementation.
    (ii) What is the advantage of this technique? Why?
11. It is desired that the circle with centre at the origin and radius 8 in the first quadrant is to be drawn. Using Bresenham circle generation algorithm determine the pixels which would approximate the desired portion of the circle.
12. When 8-way symmetry is used to obtain a full circle from pixel coordinates generated for the 0^o to 45^o octant some pixels are set or plotted twice. This phenomenon is sometimes referred to as overstrike. Identify where overstrike occurs.
13. Digitize a line from (1,2) to (12,18) on a raster screen using Bresenham straight line algorithm and compare it with line generated using DDA algorithm.
14. Explain Bresenham algorithm for line generation and hence generate line between (20, 10) and (30, 18)
15. ExplainBresenham algorithm for circle generation and hence generate circle of radius 10 about origin

Unit II Part A (2 Marks)

1. Define geometric transformation.
2. Justify the need for homogenous coordinates.
3. What do you mean by composite transformation?
4. Write all geometric transformation matrices in homogenous form.
5. Identify the rotated point (x',y',1) of (x,y,1) on performing rotation transformation.
6. List out some transformations other than geometric transformation.
7. Distinguish between uniform scaling and differentialscaling.
8. List the steps for general pivot point rotation.
9. List the steps for general pivot point scaling.
10. What are reflection and shearing?
11. Define window and viewport.
12. Draw the flowchart of two dimensional viewing pipeline.
13. Define clipping? What are its types?
14. Define the conditions to identify a point as inside or outside window boundary.
15. Draw a window with all its four bit binary coding as in Cohen Sutherland line clipping algorithm.
16. Draw a picture that illustrate polygon clipping against a window.
17. What is viewing transformation? What is difference between window and viewport?
18. Why are homogeneous coordinates used for transformation computations in Computer Graphics?

Unit II Part B (5 Marks)

1. Derive a transformation matrix for rotation about general pivot point.
2. Derive a transformation matrix for scaling about general pivot point.
3. Derive the scaling transformation to scale a point (3, 4) about point (5, 5) with scaling factors $Sx = 2$, $Sy = 2$.
4. Discuss all reflection transformation.
5. Define the condition in Liang Barsky line clipping algorithm for a line to be completely outside and partially inside window boundary.
6. Define the condition in Liang Barsky line clipping algorithm for a line to be completely outside left, right, bottom, top window boundary.
7. Define the condition in Liang Barsky line clipping algorithm for a line to come from (i) outside to inside (ii) inside to outside of window boundary.
8. Explain how curves and text are clipped against window boundary.
9. Write down the conditions for a point to be inside window boundary in Liang Barsky line clipping algorithm.
10. Define the condition in Cohen Sutherland line clipping algorithm for a line to be completely outside and completely inside window boundary.
11. What will be the effect of scaling factor Sx=1/2 and Sy=1/3 on given triangle where A(4,1), B(5,2) and C(4,3).
12. Show that a pair of parallel straight lines remain parallel even after transformation by the general 2×2 transformation matrix.
13. Describe the steps needed to stretch a unit square, located at position (4, 5) along its main diagonal from (4, 5) to (6, 10). Provide the transformation matrix.
14. Prove that two successive translations and rotations are additive and scaling is multiplicative.

15. Discuss all reflection transformation and hence find reflection of point (3, 4) about x-axis, y-axis, origin, $x=y$ line, $y = -x$ line.
16. Show that a 2D reflection through X axis followed by a 2D reflection through the line $y = –x$ is equivalent to pure rotation about the origin.
17. Determine a sequence of basic transformations that are equivalent to the x-direction shearing matrix $\begin{pmatrix} 1 & shx & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$.
18. Derive an expression for window to viewport transformation

Unit II Part C (10 Marks)

1. Using Cohen Sutherland line clipping algorithm clip the following line against a window which has lower left corner at (2, 2) and upper right corner at (5, 5).Line 1: A (3, 1) B (2, 4) Line 2: C (6, 4) D (13, 8)
2. Consider an object ABC with co-ordinates A(1,1), B(10,1) and C(5,5). Rotate object by 900 in counter clockwise direction & give the co-ordinates of transformed object.
3. A unit square is transformed by a 2x2 transformation matrix. The resulting position vectors are $\begin{pmatrix} 0 & 2 & 8 & 6 \\ 0 & 3 & 4 & 1 \end{pmatrix}$. What is the transformation matrix?
4. In 2D graphics obtain the 3 × 3 transformation matrix for translating a point by –1,2. Calculate the inverse of this matrix and show that the result is a matrix that translates a point by 1, –2.
5. A triangle is defined by $\begin{pmatrix} 2 & 4 & 4 \\ 2 & 2 & 4 \end{pmatrix}$. Find the transformed coordinates after the following transformations.(i)90° rotation about origin. (ii)reflection about line $y = –x$.
6. Give the explicit form of the 3 × 3 matrix representing the transformation: Scaling by a factor of 2 in the X direction and then rotation about (2 , 1).
7. A polygon has 4 vertices located at A(20, 10), B(60, 10), C(60, 30), D(20, 30). Indicate a transformation matrix to double the size of the polygon with point A located at the same place.
8. A triangle PQR has its vertices located at P(80,50), Q(60,10), R(100,10). It is desired to obtain its reflection about an axis, parallel to the Y axis and passing through the point A (30,10). Work out the necessary transformation matrix and also the coordinates of the vertices of the reflected triangle.
9. A mirror is vertically placed such that it passes through (20,0) and (0,20). Find the reflected view of a triangle with vertices (30,40), (50,50) and (40,70) in this mirror.
10. The reflection along the line $y = x$ is equivalent to the reflection along the X axis followed by counter clockwise rotation by θ degrees. Find the value of θ.
11. In 2D graphics the following transformation matrix would reflect a point about the diagonal line passing through the origin and (10,10)
$$\begin{pmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$
12. Show that this is same as coordination of matrix for 45 degree clockwise rotation followed by reflection about X axis and finally by counter clockwise rotation by 45 degrees about origin.
13. Show how reflections in the line y = x and in the line y = –x can be performed by a scaling operation followed by a rotation.

14. A triangle is located at P(10, 40), Q(40, 40), R(40, 30). Work out the transformation matrix which would rotate the triangle by 90 degrees (ccw) about the point Q. Find the coordinates of the rotated triangle.

A triangle is defined by the vertices $\begin{pmatrix} 1 & 0 & -1 \\ 0 & 1 & 0 \end{pmatrix}$ and the 2×2 translation matrix is $\begin{pmatrix} 3 & 2 \\ 1 & 2 \end{pmatrix}$

(i) Find the area of the triangle.

(ii) Find the vertices of the transformed triangle.

(iii) Find the area of the transformed triangle.

(iv) Find the relationship between area original, area transformed and the determinant of the transformation matrix.

15. P_1P_2 and P_3P_4 are two intersecting straight lines where $P_1 = (1, -1)$, $P_2 = (-1, -2)$, $P_3 = (1, -1)$, $P_4 = (-2, 1)$. Discuss the effect on the length of the lines and the angle between them when operated on by the following 2D transformation matrices respectively.

(i) Translation matrix $\begin{pmatrix} 1 & 0 & -1 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{pmatrix}$

(ii) 30° rotation matrix $\begin{pmatrix} \frac{\sqrt{3}}{2} & \frac{-1}{2} \\ \frac{1}{2} & \frac{\sqrt{3}}{2} \end{pmatrix}$

(iii) Non-uniform scaling matrix $\begin{pmatrix} \frac{1}{2} & 0 \\ 0 & 2 \end{pmatrix}$

(iv) Reflection (about $y = -x$) matrix $\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$

16. Prove or disprove the following statement:
'To perform general 2D transformation on a straight line, it is sufficient to transform the end points individually and then draw a straight line between these transformed points.'
17. Describe the steps needed to tilt a 2 × 2 square, located at position (4, 2) so that itsbottom edge is oriented parallel to the (1, 2) vector. Provide the transformation matrix. Show how you derived the matrix.
18. Describe the steps and provide the transformation matrix to convert objects to acartesian coordinate system in which the origin is located at position (4, 3) w.r.t to the original system and the X axis is now parallel to the line [1, 4].
19. Find the transformation that converts a square with diagonal vertices (0, 3) and (–3,6) into a unit square at the origin.
20. Prove that 2D rotation and scaling commute if $Sx = Sy$ or if $\theta = n\pi$ for integer n.
21. In 2D, what angle of rotation is equivalent to a reflection through the origin, meaning a reflection through both the X axis and the Y axis?
22. Find a single transformation matrix to scale a unit square placed at the origin along itsdiagonal (0, 0) – (1, 1) by a scale factor of 2.

23. Determine the homogeneous transformation matrix for reflection about the line y=mx + b or y=2x - 6.
24. Show that the composition of two rotations is additive by concatinating the matrixrepresentations for R(θ1) and R(θ2) to obtain R(θ1).R(θ2) = R(θ1+ θ2).
25. Prove that the multiplication of transformation matrices for each of the following sequenceof operations is commutative:(a) Two successive rotations.(b) Two successive translations. (c) Two successive scalings.
26. Show that transformation matrix $\begin{pmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ for a reflection about the line y = x, is equivalentto a reflection relative to the x axis followed by a counterclockwise rotation of 90 degree.
27. Show that two successive reflections about either of the coordinate axes is equivalentto a single rotation about the coordinate origin.
28. Show that two successive reflections about any line passing through the coordinateorigin is equivalent to a single rotation about the origin.
29. Explain how a line is saved for display using Liang Barsky line clipping algorithm.
30. Explain how a line is saved for display using Sutherland Hodgeman polygon clipping algorithm.
31. Explain how a line is saved for display using Cohen Sutherland line clipping algorithm.

Unit III Part A (2 Marks)

1. Differentiate geometric transformation of two dimensions and three dimensions.
2. Write translation and scaling 3D transformation matrices.
3. Write on reflection transformation in 3D.
4. Write on Shear transformation in 3D.
5. Define view reference point.
6. What is viewplane and view distance?
7. What is view plane normal vector?
8. Define (i) projection (ii) orthographic projection (iii) isometric projection.
9. Draw a picture that illustrate parallel and perspective projection.
10. List three differences between parallel and perspective projection.
11. What are two types of parallel projection? Differentiate them.
12. Write on viewing coordinates.
13. What is oblique projection? Give some examples of oblique projection.
14. Compare parallel and perspective projections with reference to practical use only.
15. What is the physical significance of the vanishing point?
16. What is the use of normalised device coordinates?
17. In Computer Graphics, why is a distinction made between modeling and viewing?

Unit III Part B (5 Marks)

1. Write down the transformation matrices of parallel and perspective projection.
2. Write the 3D transformation matrices for translation, scaling, rotation, x-axis rotation, y-Axis rotation.
3. List out the steps and draw pictures for arbitrary axis rotation in 3D.
4. Identify the rotated point (x',y',z',1) of (x,y,z,1) on performing x-axis, y-axis, z-axis rotation transformation.
5. Derive an expression for parallel projection of a 3D object onto a 2D space.
6. Derive an expression for perspective projection of a 3D object onto a 2D space.
7. Elaborate three dimensional geometric transformation.
8. A cube has its vertices located at *A(0, 0, 10), B(10, 0, 10), C(10, 10, 10), D(0, 10, 10), E(0, 0, 0), F(10, 0, 0), G(10, 10, 0), H(0, 10, 0).* The Y axis is vertical and Z axis is oriented towards the viewer. The cube is being viewed from the point (0, 20, 80). Work out the perspective view of the cube on the XY plane.
9. Define: (a) modeling coordinates (b) world coordinates (c) viewport (d) normalised device coordinates
10. Briefly explain all the viewing parameters while displaying a 3D object on a 2D screen.
11. Explain the terms: Projection plane, View plane, Coordinates and View volume with reference to 3D graphics. State and explain the anomalies of perspective projection.
12. Write 3D transformation matrix to find reflection of a point P(100,200,300) about plane z = 0.
13. Describe how a 3D object is presented on the screen using perspective projection. Take a simple object for illustration.

Unit III Part C (10 Marks)

1. Specify suitable rotations (in terms of angle and axis of rotation) that you may apply so as to coincide the vector joining the origin and point (1,1,1) with Z axis.
2. Write necessary steps in order to describe a method of reflection of a three-dimensional figure about an arbitrary plane in terms of matrix operations.
3. Show how to use a three-dimensional matrix to rotate the unit cube [vertices (0,0,0),(1,0,0), (1,1,0), (0,1,0), (0,1,1), (1,1,1), (1,0,1), (0,0,1)] about the axis defined by vector [1 1 1].
4. Derive the transformation matrix (in homogeneous coordinate) to rotate a 3D object by an angle about an arbitrary line parallel to but not coincident with Z axis.
5. Determine 3D transformation matrices to scale the line AB in Z direction by 3.5 by keeping point A fixed. Then rotate this line by 45° anticlockwise about X axis. Given A (10, 15, 20) and B (45, 60, 30).
6. Derive the necessary transformation matrix in 3D using homogeneous coordinate system to scale by a factor *s* w.r.t. the origin along a line making equal angles with all three axes.
7. An object is being viewed from the point (50,0,0). Obtain the transformation matrix to get projection of a point P(x, y, z) on the YZ plane. Obtain the transformation matrix if the projection plane is now x+10=0.
8. Consider a 3D coordinate system where the Y axis is vertical and Z axis pointingtowards the viewer. A line A(10,-10,10) B(10,-10,0) is viewed from the point P(0,0,20). Find where the points A and B would be projected on the XY screen?
9. In a 3D coordinate system a box is placed at the origin such that its three edges aretouching X,Y and Z axes. Describe the transformation matrix needed to show the side view of the box on the XY screen.
10. A rectangular field is described in 3D coordinate system a follows:
    A(-20,-20,0) B(20,-20,0)C(20,-20,-40) D(-20,-20,-40).
    Where the Y axis represents the vertical axis and Z axis is towards the viewer. A person is located at P(0,0,20) and is looking at the field. Obtain the perspective view generated on the XY plane.
11. A unit cube is projected onto the XY plane under perspective projection with centre ofprojection being (0, 0, –10). Draw the projected image of the cube. Determine the vanishing point for this transformation.
12. A unit cube is projected onto the XY plane under the parallel projection whose directionof projection is (1, 1, 1). Obtain the projection of the cube and draw it.
13. A cube with sides of length 2 is placed so that a corner lies on the origin and three mutually perpendicular edges from this corner lie on the three positive coordinate axes. Now do the following:
    (i) Translate the cube along the XY plane so that the cube face is centred on the origin.
    (ii) Perform three-point perspective projection on the translated cube on the z=0 plane with centres of projections x=-10, y=-10 and z=10 on the respective coordinate axes. Draw the projected cube.
14. Prove that the multiplication of three dimensional transformation matrices for eachof the following sequence of operations is commutative:
    (a) Any two successive translations.
    (b) Any two successive scaling operations.
    (c) Any two successive rotations about any one of the coordinate axes.
15. Derive a transformation matrix for rotating an object about an arbitrary axis.
16. Discuss in detail three dimensional viewing.

Unit IV Part A (2 Marks)

1. What are the classifications of hidden surface removal algorithms? List few of its applications.
2. Give the difference between object and image space methods.
3. Give examples of image space visibility algorithms.
4. Give examples of object space visibility algorithms.
5. What is depth buffer method?
6. What is the drawback of depth z-buffer method?
7. What is A-buffer method? List its advantages.
8. What is Binary Space Partition tree method?
9. What is Octree?
10. List the data which is contained in linked list of A-buffer?
11. How to get normal vector for a 3D surface, polygon?

Unit IV Part B (5 Marks)

1. Explain back face detection method of visible surface identification.
2. Explain area subdivision method of visible surface identification.
3. Explain A-buffer method of visible surface identification.
4. Explain BSP tree method of visible surface identification
5. Explain Ray casting method.
6. Explain scan line method of visible surface identification.
7. Explain depth buffer method visible surface identification
8. Name eight different Visible Surface Detection Methods.
9. Analyze A rectangular window has the corners(0,0) and (8,8).First polygon has vertices A(9,2), B(2,6) and C(14,1) and the second polygon has vertices P(2,1), Q(3,6) and R(6,3).Find the relationship between polygon and window using bounding box method.
10. Explain Depth sorting method.
11. Explain Octree method for visible surface detection.
12. What is the application of Coherence in Visible Surface Detection methods?
13. Explain the types of Coherence.
14. Discuss about edge table and polygon table used in scan line method?
15. Discuss about depth field in A-buffer?
16. Discuss about intensity field in A-buffer?
17. Discuss about two functions of depth sorting method?
18. Discuss about four surfaces of Area subdivision method?

Unit IV Part C (10 Marks)

1. Explain back-face detection technique, for identifying allthe visible faces of a convex polyhedron that has different-colored surfaces. Assumethat the object is defined in a right-handed viewing system with the xy-plane as theviewing surface.
2. Implement a back-face detection algorithm using an *orthographic parallel* projectionto view visible faces of a convex polyhedron. Assume that all parts of the object arein front of the view plane, and provide a mapping onto a screen viewport for display.
3. Implement a back-face detection procedure using a perspective projection to viewvisible faces of a convex polyhedron. Assume that all parts of the object are in frontof the view plane, and provide a mapping onto a screen viewport for display.
4. Implement the depth-buffer method to display the visible surfaces of a given polyhedron.How can the storage requirements for the depth buffer bedetermined from thedefinition of the objects to be displayed?
5. Implement the depth-buffer method to display the visible surfaces in a scene containingany number of polyhedrons. Set up efficient methods for storing and processingthe various objects in the scene.
6. Implement the A-buffer algorithm to display a scene containing both opaque andtransparent surfaces. As an optional feature, your algorithm may be extended to includeantialiasing.
7. Discuss how to implement the scan-line algorithm for a scene containing severalpolyhedrons. Use polygon and edge tables to store the definition of the object, anduse coherence techniques to evaluate points along and between scan lines.
8. Explain how to display the visible surfaces of a convex polyhedron using thepainter's algorithm. That is, surfaces are to be sorted on depth and painted on thescreen from back to front.
9. Discuss the depth-sorting method to display the visible surfaces ofany given object with plane faces.
10. Develop a depth-sorting method to display the visible surfaces in a scene containingseveral polyhedrons.
11. Explain how to display the visible surfaces of a convex polyhedron using theBSP-tree method.
12. Explain how would you test a given plane surface against a rectangulararea to decide whether it is a surrounding, overlapping, inside, or outside surface.
13. Explain the steps to display an octree representation for an object sothat hidden-surfaces are removed.
14. Explain briefly the steps for viewing a single sphere using the ray-casting method.
15. Illustrate how a visible surface detection process can be adopted to perform shadow areas detection.
16. Describe the Back-Face Detection Method. This method is very useful in the visible-surface detection process, why? What else should be handled after Back-Face Detection, in order to conclude the set of all visible-surfaces?
17. Define z-buffer method for hidden surface removal?

Unit V Part A (2 Marks)

1. Define multimedia. How the multimedia is classified?
2. Define digital image and digital animation.
3. List any five digital audio editing operations.
4. Differentiate analog audio and digital audio.
5. Define MIDI. List its advantages and limitations.
6. List MIDI attributes?
7. What is a font? What are true type fonts?
8. Define hyper-text and hyper media.
9. What are jaggies?
10. Differentiate between 2D and 3D animations.
11. Differentiate between 2D and 3D graphics.
12. Differentiate between 2D and 3D texts.
13. Describe the capabilities and limitations of bitmap images?
14. Describe the capabilities and limitations of vector images?
15. Define various aspects of 3-D modeling?
16. Explain Hypermedia and Hypertext?
17. Give an explanation about the basic sound editing operations?
18. Discuss the animation techniques?
19. What is multimedia- Explain the applications of multimedia in business.
20. What is Sound- Explain the characteristics of Sound.
21. Explain Multimedia with suitable example of any two applications.
22. Define BMP and XBM File Format.
23. What is digital video? Explain the use of digital video in developing multimedia applications.
24. What is multimedia software?
25. What is multimedia hardware?
26. Explain the role of internet tools for World Wide Web.
27. What is the use of video?
28. What is Digital graphics? Write about 3D graphics.
29. State the importance of animation in multimedia.
30. How the user benefited through multimedia?
31. What is Text? Write about 3D-Text.
32. List the uses of Fonts and its types.
33. List some applications of sound cards.
34. Give the reason digital images used in multimedia.
35. Define Hertz.
36. What is Hypermedia? Write any two advantages.
37. What is trimming in digital audio?
38. What is bit rate?
39. Define jaggies and anti-aliasing in multimedia.
40. Differentiate between text and hyper-text.
41. What is masking in digital image?
42. Define re-assembling in digital audio.
43. What are the key differences between 2D and 3D graphics?
44. State the demands that must be addressed in multimedia.

45. Discuss any two pros and cons of morph animations.
46. Write down the limitations of game animations.
47. What is animation? List its types.
48. What are the major components that make up multimedia?
49. What is hypertext? State the advantages of hypertext.
50. What are the objectives of digital video? Explain how it is different from other media.

Unit V Part B (5 Marks)

1. Write on multimedia text display design considerations.
2. Write the needs of graphics in multimedia.
3. Justify text as multimedia element.
4. Justify audio as multimedia element.
5. Justify image as multimedia element.
6. Justify animation as multimedia element.
7. Justify video as multimedia element.
8. List at least three factors that affect the legibility of text?
9. Discuss the potential and limitations of hypertext and hyper linking systems?
10. Discuss the general principles of sound and how it can be used in a multimedia project?
11. List the important steps and considerations in recording and editing digital audio?
12. Describe the use of colors and palettes in multimedia? Discuss the various file types used in multimedia?
13. List important considerations in converting from digital video to television? Also list the important considerations in shooting and editing video for use in multimedia?
14. Define popular video recording formats and discuss their strength and weakness for use in multimedia with its benefits and drawbacks of each type?
15. Describe the various output devices available for personal computers and how they may be used in multimedia production and delivery?
16. List several common types of graphics and animation programs used in multimedia projects, and discuss their capabilities?
17. Explain animation techniques and file formats?
18. Give an explanation about the analog broadcast video standards?
19. Describe what is MIDI, what its benefits are and how it is best used in a multimedia project?
20. Discuss the various factors that apply to the use of images in multimedia? Describe the difference between bitmap and vector images?
21. List out the features of 3D modeling tools, image editing tools and sound editing tools?
22. Give an explanation about Audio and Video?
23. Explain the analog to digital conversion process in detail.
24. Explain the digital to analog conversion process in detail.
25. What is Sound? Explain the characteristics of Sound.
26. What is Synthesizers? Explain the types of Synthesizers and characteristics of Synthesizers
27. Write a short note on i. Components of MIDI ii. MIDI Messages iii. Channel and System Messages
28. What is Sound Card? Explain the basic components of sound card.
29. Explain how image is store in digital format.
30. What is digital video? Explain the use of digital video in developing multimedia applications.
31. Explain the three video signal formats.
32. Explain how image is store in digital format.

33. What is the difference between system dependent formats and system independent formats?
34. Explain briefly the verities of multimedia software
35. Explain digital video with digital architecture.
36. Differentiate the interactive and non-interactive multimedia with an example.
37. Enumerate the essential of MIDI.
38. Give the differences between 2D and 3D techniques that enabled in multimedia.
39. With suitable example list out the applications of multimedia.
40. What are the basic operations in digital images? Discuss in detail.
41. Discuss in detail about MIDI music file recording and editing.
42. With suitable example explain the classifications of multimedia.
43. How to create 3D titles? Explain the technology that enabled in multimedia.
44. Describe in detail audio operations and editing terminology in multimedia.
45. What is font? How it help to create multimedia titles in multimedia? Discuss in detail.

Unit V Part C (10 Marks)

1. Explain MIDI in detail.
2. Discuss in detail Video broadcasting standards.
3. List all multimedia files formats and their purpose.
4. Define the multimedia skillset.Discuss how it applies to multimedia projects and the skills needed to successfully manage a project team? List the multimedia skill categories related to the information and interface of a project?
5. List at least three styles for a font? Discuss the difference between a typeface and a font?
6. Define digital audio and discuss its attributes, including how sound is sampled and sampling parameter?
7. Discuss the audio file formats used in multimedia projects and how they are used?
8. Discuss the various factors that apply to the use of images in multimedia?
9. Discuss the origin of cell animation and define the words that originate from this technique? Define the capabilities of computer animation and the mathematical techniques that differ from traditional cell animation?
10. Discuss the important considerations in using digital video in multimedia? Describe the basics of video recording and how they relate to multimedia production?
11. Describe the various input devices available for personal computers and how they may be used in multimedia production and delivery?
12. Explain principles of animation and how we can perform animation by computer?
13. Explain Digital video and Analog video?
14. Give a detail explanation about video recording and tape formats?
15. Explain MIDI versus Digital audio and also write the advantages and disadvantages of MIDI over digital audio?
16. Explain the five elements of Multimedia Systems
17. What is digital video- Explain the use of digital video in developing multimedia applications.
18. Explain General MIDI and its types in detail.
19. Write short notes:
    (a) Music Sequencing Notation Tools (any one) (b) Audio Files (c) Analog V/s. Digital Signal
    (d) Script (e) Node, Anchor and Links
20. Write a short note on Analog Representation and Digital Representation.
21. Write a short note on

i. 8-bit color image ii. 24-bit color image iii. GIF
iv. TIFF v. JPEG

22. Describe how multimedia can be used for the following application area
23. Multimedia in distributed learning environment.ii.Multimedia in medical sciences.
24. Write a short notes on
    i. midi interface cards ii.scanner and scanning techniques
    iii. categories of multimedia
25. What are the main activities to be performed to convert analog to digital signals? Explain.
26. Write short notes on MP3 audio technology.
27. Write about types of font families that need to be followed in multimedia projects.
28. What are the various types of animations? Explain the role play in multimedia projects.
29. Answer in short :
    (a) Hypertext (b) Target Audience (c) Quantization (d) DVD Audio (e) Synthesizers
    (f) S-Video (g) 8-bit ColourImage (h) Animation (i) WAV Files