Program: Computer Engineering
Curriculum Scheme: Rev2019
Examination: SE Semester III
Course Code: CSC305 and Course Name: CG

Time: 2 hour   Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Raster scan display means that the screen is scanned
Option A:	Top to bottom and right to left
Option B:	Left to right and top to bottom
Option C:	Bottom to top and left to right
Option D:	Bottom to top and right to left
2.	For the scan-line polygon fill algorithm, each horizontal edge should be
Option A:	Ignored
Option B:	Treated as a single intersection point
Option C:	Treated as two intersection points
Option D:	Treated as one or two intersection point, depending on the adjacent vertices
3.	Coordinates of viewport are known as ....
Option A:	World coordinates
Option B:	Polar coordinates
Option C:	Cartesian coordinates
Option D:	Screen coordinates
4.	The region code of a point is 0101. The point is in the .... region of the window.
Option A:	Top Right
Option B:	Top Left
Option C:	Bottom Left
Option D:	Bottom Right
5.	One of the drawbacks of _____ algorithm is that it can't produce connected areas.
Option A:	Cohen Sutherland
Option B:	Liang Barsky
Option C:	Sutherland Hodgeman
Option D:	Weiler Atherton
6.	The blinding functions of Bezier curves are
Option A:	Splines
Option B:	Bernstein polynomials
Option C:	Lagrangian polynomials
Option D:	Newton polynomials
7.	Find the coordinates after reflection of the triangle [A (10, 10), B (15, 15), C (20,

	10)] about x-axis.
Option A:	A'(10,10) B'(15.15) C'(20,10), A'(10,10), B'(15.-15), C'(20,-10)
Option B:	A'(10,-10) B'(15.-15) C'(20,-10), A'(10,-10), B'(15.-15), C'(20,-10)
Option C:	A'(15,-10) B'(10.-15) C'(10,-10), A'(20,-10), B'(20.-15), C'(15,-10)
Option D:	A'(-10,-10) B'(-15.-15) C'(-20,-10), A'(-10,-10), B'(-15.-15), C'(-20,-10)
8.	The point, from which the observer is assumed to view the object, is called
Option A:	Center of projection
Option B:	Point of projection
Option C:	Point of observer
Option D:	View point
9.	Which surface algorithm is based on perspective depth ?
Option A:	Depth comparison
Option B:	Z-buffer or depth-buffer algorithm
Option C:	Subdivision method
Option D:	Back-face removal
10.	What method of animation creates the in-between frames when you create the start and end of the animation?
Option A:	Motion
Option B:	Classic
Option C:	Shape
Option D:	Tweening
11.	Aspect ratio means
Option A:	Number of pixels
Option B:	Ratio of vertical points to horizontal points
Option C:	Ratio of horizontal points to vertical points
Option D:	Ratio of Diagonal points to vertical points
12.	Raster means
Option A:	Series of parallel lines
Option B:	Series of parallel blocks
Option C:	Series of parallel medium
Option D:	Series of parallel sweeps
13.	In a _____, at least one angle measures more than 180 degree
Option A:	Circle
Option B:	Convex Polygon
Option C:	Concave Polygon
Option D:	Canvas Polygon
14.	Which of the following algorithms is used when we want to fill the area bounded by different color boundaries?
Option A:	Boundary-fill Algorithm
Option B:	Scan-line Algorithm
Option C:	Flood-fill algorithm
Option D:	Seed-fill algorithm

15.	Positive values for the rotation angle Ө defines
Option A:	Counterclockwise rotations about the end points
Option B:	Clockwise rotations about the reference point
Option C:	Counterclockwise rotations about the reference point
Option D:	Negative direction
16.	Two consecutive scaling transformations are always commutative and _____ .
Option A:	Additive
Option B:	Subtractive
Option C:	Multiplicative
Option D:	Division
17.	In Sutherland -Hodgeman polygon clipping algorithm, if the first vertex of the edge is outside the window boundary and the second vertex of the edge is inside then _____ and ____ are added to the output vertex list.
Option A:	first vertex, second vertex
Option B:	first vertex, the intersection point of the polygon edge with the window boundary
Option C:	Second vertex,the intersection point of the polygon edge with the window boundary
Option D:	First intersection and second intersection point of the polygon edge
18.	When the angle between the projectors and the plane of projection is not equal to 90 degrees then the projection is
Option A:	Orthographic
Option B:	Isometric
Option C:	Perspective
Option D:	Oblique
19.	Fractals deals with curves that are?
Option A:	irregularly irregular
Option B:	regularly irregular
Option C:	irregularly regular
Option D:	regularly regular
20.	Perspective projection is characterized by the
Option A:	View plane alone
Option B:	Centre of projection and the view plane
Option C:	Direction of projection and the view plane
Option D:	Centre of projection alone

Q2 (10 Marks Each)	Solve any Two Questions out of Three 10 Marks Each
A	Plot the points for midpoint ellipse with rx=3 and ry=5 for region 1
B	Explain all 2D transformation with appropriate example.
C	States the visible surface detection algorithm are classified.Explain back surface detection method in details with example.

Q3.	
A	**Solve any Two** **5 marks each**
i	What is aliasing and antialiasing? Explain any one method.
ii	Differentiate between parallel and perspective projection.
iii	What are key frame? Explain how key frame animation works.
B	**Solve any One** **10 marks each**
i	Explain the steps for 2D rotation arbitrary points and provide the composite transformation matrix for the same.
ii	Explain Sutherland Hodgeman polygon clipping algorithm with suitable example.