Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2024

Sixth Semester

18CSE464T – COMPUTER GRAPHICS AND GAME PROGRAMMING

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. How many methods are there for producing color display? (A) 5 (B) 4 (C) 3 (D) 2	1	1	1	1
2. What value of rotation angle rotates the object in anti-clockwise direction? (A) Positive value (B) Negative value (C) Value less than 180 degree (D) Value greater than 180 degree	1	1	1	3
3. Bresenham's line drawing algorithm is superior than DDA because (A) It is the latest (B) No round up is required (C) Only addition is used (D) LED monitors are used	1	2	1	3
4. The scale factor of viewport transformation for X-coordinate is _____. (A) $S_X = (S_{Ymax} - S_{Ymin}) / (S_{Wmax} + S_{Wmin})$ (B) $S_X = (S_{Ymin} - S_{Ymax}) / (S_{Wmin} + S_{Wmax})$ (C) $S_X = (S_{Ymax} - S_{Ymin}) / (S_{Wmax} - S_{Wmin})$ (D) $S_X = (S_{Ymax} + S_{Ymin}) / (S_{Wmax} - S_{Wmin})$	1	2	1	3
5. Which of the following refer to a model that represent all the dimension of an object external as well as internal? (A) Wire frame model (B) Constructive solid geometry methods (C) Destructive solid geometry methods (D) Composite transformation	1	2	2	2
6. _____ is a method used for determining boundaries of the resulting object if you start with a boundary representation. (A) Ray casting (B) Surface rendering (C) Illustration model (D) Oct-tree representation	1	1	2	1
7. A transformation that slants the shape of an object is called _____. (A) Reflection (B) Shear (C) Scaling (D) Distortion	1	1	2	2

8. Sutherland Hodgeman algorithm works well for 1 1 2 1
   (A) Concave polygon (B) Convex polygon
   (C) Smooth curves (D) Line segment

9. The chromaticity for a given color is determined by 1 1 3 1
   (A) Hue, intensity (B) Hue, saturation
   (C) Luminance, grey level (D) Luminance, quadrature

10. The intersection of three primary RGB color produces 1 1 3 1
   (A) White (B) Black
   (C) Magenta (D) Blue

11. In back-face detection algorithm, if 'V' is along positive 2 direction than polygon is back-face if _____. 1 2 3 2
   (A) C < = 0 (B) C > = 0
   (C) C > = 1 (D) C < = 1

12. HSV stands for _____. 1 1 3 1
   (A) Hue, sense, value (B) Hue, saturation, velocity
   (C) Hue, saturation, value (D) Host, sensitivity, value

13. For scripting in unity, the following language is not available 1 1 4 1
   (A) Java (B) C#
   (C) Python (D) C++

14. A game object in unity can have scripts. 1 2 4 9
   (A) 0 (B) Only 1
   (C) 0 or more (D) Atleast 1 or more

15. The properties of game object can be set through 1 1 4 9
   (A) Project window (B) Console
   (C) Inspector (D) Animator

16. Scenes are included in _____ folder. 1 1 4 1
   (A) Build (B) Assent
   (C) Library (D) Project settings

17. In sprite renderer which features is used in major for 3D physics? 1 1 5 1
   (A) Color (B) Material
   (C) Sorting (D) Layering

18. Dragging an object from scene to assets makes it _____. 1 1 5 1
   (A) Prefab (B) Script
   (C) Active (D) Inactive

19. _____ is basically a form of pictorial representation. 1 1 5 9
   (A) Photography (B) Drawing
   (C) Animation (D) Creativity

20. What are the two audio components used in utility? 1 2 5 9
   (A) Audio listener and audio source (B) Audio creator and audio tester
   (C) Audio source and audio tester (D) Audio creator and audio recorder

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Explain about window to view port transformation.	4	2	1	3
22.	Write short notes on seed fill algorithm in filled area primitives.	4	2	1	3
23.	Summarize the concept of text clipping operation with neat diagram.	4	2	2	3
24.	What are fractals? List out the types of fractals.	4	2	2	1
25.	Classify the basic models of illumination.	4	2	3	3
26.	Write the steps involved in importing an asset in unity.	4	2	4	5
27.	Illustrate the practice of particle system used in unity.	4	2	5	5

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Explain in detail about the various types of display graphics and their applications.	12	2	1	3
	(OR)				
b.	Discuss in detail about the basics of two dimensional (2D) geometric transformations.	12	2	1	3
29. a.	Explain in detail about B-spline curves and surfaces also list its properties.	12	2	2	3
	(OR)				
b.	Implement the Cohen-Sutherland line clipping algorithm for a line with end points (–1, 5) and (3, 8) and window boundaries. $(X_{min}, Y_{min}) = (-3, 1)$ $(X_{max}, Y_{max}) = (2, 6)$	12	2	2	3
30. a.	Explain the concept of depth buffer method and A-buffer method for visible surface detection algorithm.	12	2	3	2
	(OR)				
b.	Write short notes on (i) Half tone and dithering techniques (ii) CMY and HLS color models	12	2	3	2
31. a.	Explain about event handling unity, write about the event handling functions.	12	3	4	5
	(OR)				
b.	Illustrate the steps involved in designing a basic game.	12	3	4	5

32. a.	Write short notes on (i) PREFABS (ii) SPRITES	12	3	5	3
	(OR)				
b.	Outline the requirements for developing mobile game using unity tool.	12	3	5	9

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