b.	Can you explain all the 3D transformations through matrix? If yes explain all the matrix representations clearly.	10	3	2	2
28. a.	Explain about the illumination models with mathematical expressions.	10	2	3	2
	(OR)				
b.	Describe about any two color models in detail with illustrations.	10	2	3	2
29. a.	Write brief notes on the following:				
	(i) Importing assets	5	2	4	5
	(ii) Creating prefab	5	2	4	5
	(OR)				
b.	Write shot notes on				
	(i) Working with camera and lights	5	2	4	5
	(ii) Inspector window	5	2	4	5
30. a.	How collisions are identified? Explain the usage of different types of colliders.	10	3	5	5
	(OR)				
b.	Explain animation concept in unity. How can you add animation in unity?	10	3	5	5

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2022

Sixth Semester

18CSE464T – COMPUTER GRAPHICS AND GAME PROGRAMMING

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

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** should be answered in answer booklet.

Time: 2½ Hours Max. Marks: 75

		Marks	BL	CO	PO
	PART – A (25 × 1 = 25 Marks)				
	Answer **ALL** Questions				
1.	How many methods are there for producing color display? (A) 5 (B) 4 (C) 3 (D) 2	1	1	1	3
2.	Distortion effects produced when representing a high-resolution signal at a lower resolution is called (A) Anti-aliasing (B) Aliasing (C) Blurring (D) Muddy	1	1	1	3
3.	_____ allows screen positions to be selected with the touch of a finger. (A) Touch panels (B) Image scanner (C) Light pen (D) Mouse	1	1	1	3
4.	In data line drawing, when the slope is greater than 1, we calculate the next X value by (A) $X_{K+1} = X_{K-1}$ (B) $X_{K+1} = X_K + \frac{1}{m}$ (C) $X_{K+1} = X_K + 1$ (D) $X_{K+1} = X_K - \frac{1}{m}$	1	1	1	3
5.	Bresenham's line drawing algorithm is superior than DDA because (A) Bresenham's algorithm is the latest (B) No round up is required (C) Uses only addition (D) Introduced for LED monitors	1	1	1	3
6.	Which of the following refers to the shapes created by union, intersection and difference of given shapes? (A) Wire frame model (B) Composite transformation (C) Constructive solid geometry methods (D) Destructive solid geometry methods	1	1	2	3,2

7. If a point (X,Y,Z) is to be translated by an amount DX, DY, DZ respectively, then what will be the value of the newly translated points (X1, Y1,Z1)? 1 1 2 3,2
(A) X1 = X, Y1 = Y, Z1 = Z
(B) X1 = DX, Y1 = DY, Z1 = DZ
(C) X1 = X+DX, Y1 = Y+DY, Z1 = Z+DZ
(D) X1 = X–DX, Y1 = Y–DY, Z1 = Z–DZ

8. The Cohen Sutherland algorithm divides the region into _____ number of spaces. 1 1 2 5,2
(A) 8 (B) 6
(C) 7 (D) 9

9. The shape of the Bezier curve is controlled by 1 1 2 3,2
(A) Control points (B) Knots
(C) End points (D) Tangents

10. The Koch snowflake fractal starts with this shape 1 1 2 3,2
(A) Square (B) Tear drop
(C) Triangle (D) Circle

11. In which of the following projection, the object size differs when looked from different distances? 1 1 3 3,2
(A) Parallel (B) Cavalier
(C) Perspective (D) Cabinet

12. Which of the following refer to a model that represents all the dimension of an object, external as well as internal? 1 1 3 3,2
(A) Wire frame model (B) Constructive solid geometry methods
(C) Composite transformation (D) Destructive solid geometry methods

13. Who developed the phong shading model? 1 1 3 3,2
(A) Dui Tuang Phong (B) Bui Toung Phong
(C) Cohen Sutherland (D) Hodgeman Phong

14. If we assume a uniform intensity of ambient light I_a, then the intensity of the diffuse reflection at any point on the surface: I = _____. 1 1 3 3,2
[where K_a = the ambient diffuse coefficient of reflection]
(A) K_a / I_a (B) $K_a * I_a$
(C) $K_a - I_a$ (D) $K_a + I_a$

15. RGB colour model uses the prime RGB (Red Blue Green) colurs because they are 1 1 3 3,2
(A) Safe colours (B) Web colours
(C) Bright colours (D) Web safe colours

16. When you import an object from other platform, to unity, it is called as 1 1 4 3
(A) Asset (B) Jewel
(C) Tool (D) Sprite

17. For scripting in unity the following language is not available 1 1 4 3
(A) Java (B) C#
(C) Python (D) C++

18. Which function can be called more than once per frame? 1 1 4 3
(A) Update ( ) (B) Fixed Update ( )
(C) Late Update ( ) (D) Late Bind ( )

19. The properties of a game object can be set through 1 1 4 3
(A) Project window (B) Console
(C) Inspector (D) Animator

20. How many version of unity released till now? 1 1 4 3
(A) 3 (B) 4
(C) 5 (D) 2

21. Following is not a type of collider. 1 1 5 3
(A) Box (B) Mesh
(C) Capsule (D) Basket

22. To make the particle system to flow from bottom to top, the gravity modifier value needs to be set as 1 1 5 3
(A) 1 (B) 0
(C) –1 (D) None

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

24. _____ is used draw extra information for the game object. 1 1 5 3
(A) Sprite (B) Prefab
(C) Gizmo (D) Collider

25. If multiple colliders need to be used for a game object, they need to be of 1 1 5 3
(A) Same type (B) Different type
(C) No condition (D) Common type

PART – B (5 × 10 = 50 Marks)

Answer **ALL** Questions

Marks BL CO PO

26. a.i. Describe the working principle of color CRT monitor. 5 2 1 3

ii. Write the difference between raster scan and random scan. 5 2 1 3

(OR)

b. Explain the 2D transformations with matrix representations. 10 2 1 3

27. a. Implement the Cohen-Sutherland line clipping algorithm for a line with end points P1 (150,150) and P2 (400,300) and with window boundaries (X MIN, Y MIN) = (100,100) and (X MAX, Y MAX) = (300,200). 10 3 2 2

(OR)