B.Tech. DEGREE EXAMINATION, NOVEMBER 2022
Sixth/ Seventh 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

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

	Marks	BL	CO	PO

1. Which of the following is/are computer graphics scanning mechanism? — 1, 1, 1, 3
   (A) Raster and vector   (B) Raster and scalar
   (C) Scalar only   (D) Vector only

2. In CRT monitor, the screen is coated with _____ elements. — 1, 1, 1, 3
   (A) Neon   (B) Phosphors
   (C) Sulphur   (D) Potassium

3. Which device is used to position the screen cursor? — 1, 1, 1, 3
   (A) Space ball   (B) Joy stick
   (C) Data glove   (D) Mouse

4. In DDA line drawing algorithm, the number of steps for repeating the calculation depends on — 1, 1, 1, 3
   (A) DX only   (B) M
   (C) DY only   (D) P

5. In Bresenham's algorithm, how many formula is/ are used for P_{k+1} calculation? — 1, 1, 1, 3
   (A) 1   (B) 2
   (C) 3   (D) 4

6. Which of the following equation correctly represent a 3D plane? — 1, 1, 2, 2
   (A) $Ax + By + Cz = 1$ (B) $Ax + By + Cz + D = 1$
   (C) $Ax + By + Cz + D = 0$ (D) $Ax + By + Cz = 0$

7. A bit map is collection of _____ that describes an image. — 1, 1, 2, 2
   (A) Bits   (B) Colours
   (C) Algorithms (D) Pixels

8. 3D surfaces and solids can be approximated by a set of polygonal and line elements. Which of the following satisfies the above? — 1, 1, 2, 2
   (A) Polygon surfaces   (B) Polygon meshes
   (C) Polygon equations   (D) Polygon planes

9. _____ is a method used for determining boundaries of the resulting object if you start with a boundary representation.   1 1 2 2
   (A) Ray casting   (B) Surface rendering
   (C) Illustration model   (D) Octree representation

10. Fractals deal with curves that are   1 1 2 2
   (A) Regularly irregular   (B) Irregularly irregular
   (C) Regularly regular   (D) Irregularly regular

11. In which type of visible surface detection algorithms, visibility is decided point by point at each pixel position?   1 1 3 2
   (A) Object space method   (B) Image space method
   (C) Object reflection   (D) Image reflection

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

13. Sun, on the earth can be considered as   1 1 3 2
   (A) Point light source   (B) Line light source
   (C) Distributed light source (D) Symmetric light source

14. Pointed bright spots are produced by which of the following model?   1 1 3 2
   (A) Ambient   (B) Specular
   (C) Diffuse   (D) Scatter

15. The intersection of three primary RGB color produces   1 1 3 2
   (A) White   (B) Black
   (C) Magenta   (D) Blue

16. Each object in unity object hierarchy is called   1 1 4 5
   (A) Motion object   (B) Game object
   (C) Physics object   (D) Asset

17. Prefab in unity is referred for _____ template.   1 1 4 5
   (A) Pre-fabricated object   (B) Fabricated object
   (C) Post-fabricated object (D) Frozen object

18. When an application is on close, the correct sequence of execution of event function is?   1 1 4 5
   (A) Awake ( ) start ( ) onenable ( ) (B) Onenable ( ) swake ( ) start ( )
   (C) Awake ( ) onenable ( ) start ( ) (D) Start ( ) onenable ( ) awake ( )

19. When the behaviour becomes disable or inactive which function is used   1 1 4 5
   (A) Update ( )   (B) Ondestroy ( )
   (C) Ondisable ( )   (D) Onapplication ( )

20. Which collider can be used for defining the boundary for a game scene?   1 1 4 5
   (A) Capsule   (B) Box
   (C) Sphere   (D) Mesh

21. Particle system in unity is used for creating _____ effect.   1 1 5 5
   (A) Mountain   (B) Lake
   (C) River   (D) Volcano

22. In-order to make the particle system to work continuously _____ should be enabled?   1 1 5 5
   (A) Looping   (B) Prewam
   (C) Repeat   (D) Gravity modifier

23. Which function will be called during each physics step?   1 1 5 5
   (A) LateUpdate ( )   (B) OnApplicaitonQuit( )
   (C) FixedUpdate ( )   (D) Update ( )

24. What is the default shape of a particle in unity particle system?   1 1 5 5
   (A) Cone   (B) Sphere
   (C) Cube   (D) Cuboid

25. Addcurve is used to add all animations except.   1 1 5 5
   (A) Position   (B) Rotation
   (C) Scaled   (D) Texture

PART – B (5 × 10 = 50 Marks)
Answer **ALL** Questions   Marks BL CO PO

26. a. Explain about midpoint circle drawing algorithm with example.   10 2 1 3

(OR)

   b. Compare DDA and Bresenham's line drawing algorithms.   10 2 1 3

27. a. Write about B-REP and sweep representation.   10 2 2 2

(OR)

   b. Explain about different types of curves in detail.   10 2 2 2

28. a. Describe about the following in detail   5+5 2 3 2
      (i)   Back face detection
      (ii) Octree method

(OR)

   b. What is CIE? Explain about RGB and CMY colour models in detail.   10 2 3 2

29. a. Explain about event handling in unity. Write about the event handling functions.   10 3 4 5

(OR)

   b. Write short notes on   5+5 3 4 5
      (i)   Variables in scripting
      (ii) Usage of camera in unity

30. a. Explain a game scene, where we need colliders. Write the steps to apply colliders.   10 3 5 5

(OR)

   b. Explain the steps to create a flaming torch-particle system in unity.   10 3 5 5

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