32. A. Describe the process of building and publishing a mobile game to the Google Play Store or Apple App Store. What are some common challenges that game developers face during this process and how can they be addressed?   12   3   5

(OR)

B. What are touch controls and why are they important in mobile game development? Discuss some common touch control schemes used in mobile games and provide examples of how they have been implemented effectively in popular games.

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B.Tech. DEGREE EXAMINATION, JUNE 2023

Fifth Semester

18CSE314J - GAME ART

(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 40 minutes.

ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours   Max. Marks: 100

Part - A (20 × 1 Marks = 20 Marks)   Marks   BL   CO
Answer **All** Questions

1. _____ is a game engine.   1   1   1
   (A) A software that allows you to create video games
   (B) A hardware component that improves game performance
   (C) A tool used for game testing
   (D) A type of game controller

2. What is the purpose of installing Android SDK when installing Unity?   1   2   1
   (A) To optimize the Unity game engine.
   (B) To improve the graphics of Unity games
   (C) To enable Unity to run on Mac computers
   (D) To enable Unity to run on mobile devices

3. Which of the following is NOT a part of the Unity User Interface?   1   2   1
   (A) Hierarchy window
   (B) Inspector window
   (C) File Explorer
   (D) Scene view window

4. _____ is a prefab in Unity.   1   1   1
   (A) A type of game controller
   (B) A saved game object that can be reused
   (C) A component that improves game performance
   (D) A tool used for game testing

5. What is game-based programming?   1   1   2
   (A) Programming games in a specific language
   (B) Programming games for educational purposes
   (C) Programming games using virtual reality technology
   (D) Programming games for virtual events

6. _____ is a class in C#.   1   1   2
   (A) A collection of data values
   (B) A type of loop structure
   (C) A container for methods and variables
   (D) A type of exception-handling structure

7. _____ is encapsulation in C#.   1   1   2
   (A) A way to declare multiple variables at once
   (B) A way to restrict access to an object's properties and methods
   (C) A way to store multiple values of different data types
   (D) A type of conditional structure

8. Which of the following is NOT a common method of the List data structure in C#?   1   2   2
   (A) Add()
   (B) Remove()
   (C) Sort()
   (D) CountKeys()

9. _____ is a game component in Unity.   1 2 3
   (A) A specific type of game object
   (B) A reusable script that can be attached to a game object
   (C) A prefab used for level design
   (D) A physics-based simulation tool

10. _____ is the manager in game development.   1 1 3
    (A) A game object used to manage other game objects
    (B) A tool used to manage game assets
    (C) A component used to handle physics-based collisions
    (D) A type of scoring system for games

11. What is a singleton in game development?   1 2 3
    (A) A component used for managing game physics
    (B) A design pattern used to ensure only one instance of a class can be created
    (C) A way to manage game object hierarchy
    (D) A type of scoring system for games

12. Which of the following is an example of a collision in game development?   1 2 3
    (A) Two game objects colliding and bouncing off each other
    (B) A text message displayed when the player completes a level
    (C) A sound effect played when the player picks up a power-up
    (D) A particle effect displayed when the player hits an enemy

13. Which of the following is NOT a commonly used visualization tool in game development?   1 1 4
    (A) Wireframe view
    (B) Top-down view
    (C) Isometric view
    (D) Orthographic view

14. Which of the following is a commonly used audio file format in game development?   1 1 4
    (A) JPEG
    (B) MP4
    (C) WAV
    (D) PDF

15. Which of the following is NOT a commonly used particle system element in games?   1 1 4
    (A) Emitter
    (B) Particle
    (C) Collider
    (D) Force field

16. _____ - is a commonly used input device for mobile games.   1 1 4
    (A) Keyboard
    (B) Mouse
    (C) Touchscreen
    (D) Gamepad

17. Which of the following is an important consideration when deploying a game to multiple platforms?   1 1 5
    (A) Consistent game mechanics across all platforms
    (B) Optimization for each platform
    (C) Use of complex shaders
    (D) Minimal testing on each platform

18. What is the purpose of debugging in game development?   1 1 5
    (A) To make the game more visually appealing
    (B) To improve game performance
    (C) To fix errors and bugs in the game code
    (D) To optimize the game for mobile devices

19. _____ is an important factor to consider when optimizing a game for performance   1 1 5
    (A) Use of high-resolution textures
    (B) Complex particle effects
    (C) Optimization of game logic and assets
    (D) Limited testing of the game on various devices

20. What is the purpose of touch controls in mobile game development?   1 1 5
    (A) To lower power consumption on mobile devices
    (B) To add new game mechanics
    (C) To simplify game mechanics
    (D) To provide higher precision compared to traditional controllers

Part - B (5 × 4 Marks = 20 Marks)
Answer any 5 Questions

	Marks	BL	CO

21. Describe the role of a game engine in the game development process. What are some key features and benefits of using a game engine?   4 2 1

22. Explain the basic syntax and structure of a C# class. What are some common conventions and best practices for naming classes and their members?   4 2 2

23. Describe the concept of game components in Unity. Give examples of different types of game components and explain their functionality.   4 1 3

24. Explain the role of a scene manager in game development, and provide an example of a scenario where it might be used.   4 1 4

25. Illustrate the importance of optimization in game development and highlight some key optimization techniques that can be used to improve game performance.   4 2 5

26. How does Unity compare to other realtime game engines such as Unreal Engine and CryEngine? Discuss some of Unity's strengths and weaknesses as a game engine.   4 3 1

27. How do vectors play a role in game development? Describe the different types of vectors commonly used in games and their properties   4 3 2

Part - C (5 × 12 Marks = 60 Marks)
Answer All Questions

	Marks	BL	CO

28. A. Discuss the history and evolution of game engines. How have game engines changed over time, and what new features and technologies have emerged as a result? Use specific examples to support your answer.   12 3 1
    (OR)
    B. Compare and contrast the user interfaces of Unity and Unreal Engine. How do these interfaces differ in terms of ease of use, customization, and functionality? Which interface do you think is better suited for different types of game development projects?

29. A. Discuss the concept of inheritance in C#. How is it used in game development to create hierarchies of game objects? Provide an example to illustrate the use of inheritance in a game engine.   12 2 2
    (OR)
    B. Explain the concept of polymorphism in C#. How is it used in game development to allow for flexibility in game object behavior? Provide an example to illustrate the use of polymorphism in a game engine.

30. A. Explain the role of managers in game development. Give examples of different types of managers and describe their functions in a game.   12 3 3
    (OR)
    B. Describe the concept of singleton in game programming. Explain how it is used to ensure that only one instance of a class is created and how it is beneficial in game development.

31. A. Discuss the various techniques used in game setup and visualization, and explain how they can be used to create an immersive gameplay experience for players.   12 2 4
    (OR)
    B. Describe the importance of effective UI design in game development, and discuss some common UI design patterns used in games.