C–7587	Sub. Code 82633

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Game Programming

GAME ENGINE — I

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the main advantage of using 3D over 2D in game development?

   (a) Requires less processing power

   (b) More immersive gameplay experience

   (c) Easier to design

   (d) Uses fewer assets

2. Which component is essential for rendering a 3D object in a game?

   (a) Camera

   (b) Mesh Renderer

   (c) Physics Engine

   (d) Profiler Window

3. What is the purpose of Prefabs in Unity?

(a) To create reusable game objects

(b) To adjust screen resolution

(c) To modify terrain design

(d) To apply shaders

4. What is the function of Triggers in game scripting?

(a) Detects player input

(b) Handles user interface interactions

(c) Executes events without physical collisions

(d) Optimizes memory usage

5. Which data structure is commonly used for navigation and pathfinding?

(a) Arrays (b) Lists

(c) Graphs (d) Trees

6. What is the role of Joints in a 3D physics engine?

(a) To create lighting effects

(b) To control object movement and connections

(c) To manage UI interactions

(d) To optimize rendering

7. What is Lens Flare used for in game development?

(a) To simulate realistic lighting effects

(b) To adjust game difficulty

(c) To create particle effects

(d) To modify collision detection

8. What is Occlusion Culling used to improve?

(a) Texture quality

(b) Render performance

(c) Animation speed

(d) Sound quality

9. What does "Networking" in games primarily enable?

(a) High-resolution textures

(b) Multiplayer gameplay

(c) AI pathfinding

(d) UI rendering

10. What is the purpose of the Instantiate function in game development?

(a) To create dynamic game objects at runtime

(b) To remove unused objects

(c) To modify shader properties

(d) To reset player position

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the role of 3D meshes and their components in game development.

Or

(b) Discuss the impact of screen dimensions on game performance and player experience.

12. (a) How do Prefabs and Tags improve game development workflow?

Or

(b) Explain the role of event handling in managing user interactions in a game.

13. (a) What is the significance of Navigation and Pathfinding in AI-driven game mechanics?

Or

(b) Describe the importance of Raycasting and its use in 3D games.

14. (a) How does Lighting and Shading enhance the realism of a game?

Or

(b) Discuss the challenges and benefits of memory optimization in game development.

15. (a) Explain the concept of Game UI design and its importance in user engagement.

Or

(b) How does networking impact multiplayer game development?

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Describe the entire process of setting up a 3D game environment, including terrain design and object placement.

Or

(b) Explain the importance of scripting in game development and provide examples of essential functions.

17. (a) Discuss the principles of animation in game development and how they impact user immersion.

Or

(b) Explain the use of physics in game engines, focusing on collision detection and joints.

18. (a) What are the key considerations in designing and implementing a camera system in a game?

Or

(b) Explain the techniques used to optimize game performance, including frame rate handling and occlusion culling.

19. (a) Describe the step-by-step process of developing a game UI and integrating sound effects.

Or

(b) Discuss the major challenges in developing a game for multiple platforms and how they can be addressed.

20. (a) Explain the role of networking in multiplayer game development and how server-client interactions work.

Or

(b) Describe the key steps in debugging and optimizing a 3D game before final deployment.

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C–7588

Sub. Code
82636

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Game Programming

GAME NETWORKING TECHNIQUES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary purpose of a network router?

   (a) To route traffic between different networks

   (b) To store data packets

   (c) To maintain security protocols

   (d) To convert data signals

2. Which standard is used for secure encryption in networking protocols?

   (a) SHA (b) RSA

   (c) AES (d) WPA

3. What function does a modem perform in a network?

(a) Routing data between networks

(b) Encoding and decoding signals

(c) Blocking unauthorized access

(d) Managing data traffic

4. Which layer of the OSI model is responsible for the delivery of messages from the source to the destination?

(a) Application Layer

(b) Transport Layer

(c) Network Layer

(d) Data link layer

5. Which of the following is NOT a characteristic of a Bluetooth network

(a) Short-range communication

(b) Wireless transmission

(c) High-speed data transfer

(d) Low powder consumption

6. Which protocol is used in multiplayer games for real-time communication?

(a) UDP

(b) TCP

(c) FTP

(d) IP

7. What is the process of multiplexing used for in a network?

(a) Error correction

(b) Combining multiple signals into one

(c) Security protocols

(d) Packers routing

8. What is a major advantage of using the client-server model in multiplayer games?

(a) Increased server load

(b) Centralized control of the game state

(c) Simplified client interaction

(d) Reduced latency

9. Which concept in multiplayer games allows player to control characters that are not directly operated by them

(a) Non-player characters

(b) Client commands

(c) Remote Objects

(d) Authority Model

10. Which network protocol is used to allow communication between different machines in multiplayer games?

(a) RPC

(b) SMTP

(c) IMAP

(d) HTTP

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the concept of network topology and how it impacts the performance of computer networks.

Or

(b) Describe how encryption and decryption mechanism are implemented in network security protocols.

12. (a) What is the function of each layer in the OSI model? Provide a brief description of each.

Or

(b) Discuss the importance of error detection and correction in network communications.

13. (a) Explain the role of the client-server model in network multiplayer games.

Or

(b) Describe the dynamic between local clients and remote clients in a networked game environment.

14. (a) Discuss the significance of game state management in multiplayer projects and how its impact on gameplay.

Or

(b) What are the challenge sin matchmaking for multiplayer games and how are they addressed?

15. (a) Discuss the importance of host migration in ensuring seamless multiplayer game sessions.

Or

(b) How do network manager callbacks contribute to managing game state in multiplayer networks?

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Compare different network topologies used in multiplayer games, highlighting their strengths and weaknesses.

Or

(b) Explain how encoding and decoding techniques ensure the reliability and security of data in computer network.

17. (a) Describe the role of encryption protocols like WPA and WPA2 in maintaining network security in multiplayer games.

Or

(b) Discuss the significance of Bluetooth networks for mobile multiplayer games and their technical limitations.

18. (a) Explain how the authority of non-player characters/objects is managed in multiplayer game networks.

Or

(b) Discuss how commands and remote procedure calls (RPC) are used to synchronize multiplayer game actions.

19. (a) Discuss how network behaviour affects the setup and management of multiplayer games.

Or

(b) Explain how scene management impacts multiplayer gaming experience, focusing on dynamic updates.

20. (a) Describe the role of network communication callbacks in maintaining synchronization across multiplayer networks.

Or

(b) Explain how host migration works in multiplayer games and why it is crucial for seamless gameplay.

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C–7589	Sub. Code 82644

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Fourth Semester

Game Programming

WEB GAME DEVELOPMENT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which HTML5 tag is used to define self-contained content?

   (a) <section> (b) <article>

   (c) <aside> (d) <content>

2. Which of the following is NOT a semantic element in HTML5?

   (a) <header> (b) <footer>

   (c) (d) <nav>

3. Which JavaScript method is used to parse a JSON string?

   (a) JSON.parse() (b) JSON.stringify()

   (c) JSON.decode() (d) JSON.convert()

4. In JavaScript, which array method calls a function once for each element?

   (a) map() (b) forEach()

   (c) filter() (d) reduce()

5. In Canvas, which method is used to draw a rectangle?

(a) fillRect() (b) drawRect()

(c) createRect() (d) rectShape()

6. Sprite sheets are used in game development for

(a) Image compression

(b) Storing multiple frames in one image

(c) Storing audio files

(d) Database connection

7. Which event is triggered when a user presses a key?

(a) onkeypress

(b) onkeydown

(c) onkeyup

(d) All of the above

8. Which property is used to track a player's health in games?

(a) player, life

(b) healthstatus

(c) Custom variable defined by programmer

(d) hp

9. In Box2D, the function used to create a new world is:

(a) Createworld() (b) b2world()

(c) newworld() (d) Worldsetup()

10. AJAX is used for

(a) Synchronous data loading

(b) Asynchronous data loading

(c) File compression

(d) Video streaming

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the differences between HTML4 and HTML5 with examples.

Or

(b) Describe the <audio> and <video> tags in HTML5 along with their properties.

12. (a) Write a JavaScript program to validate a simple login form.

Or

(b) Explain the concept of Callback functions in JavaScript with examples.

13. (a) Describe the steps for developing a basic Canvas-based game.

Or

(b) Explain JSON parsing with a suitable example in JavaScript.

14. (a) Write short notes on implementing timers and score in a game.

Or

(b) Explain keyboard and mouse event listeners in gameplay programming.

15. (a) What is Box2D? Explain the basic setup and world definitions.

Or

(b) Explain collision detection in Box2D with examples.

Part C

(5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain Semantic tags in HTML5 with suitable examples.

Or

(b) Discuss SVG vs Canvas, including applications of Canvas.

17. (a) Describe Object-Oriented Programming concepts in JavaScript with examples.

Or

(b) Explain form handling in JavaScript using GET and POST methods.

18. (a) Explain the steps to implement sprite animations in a Canvas game.

Or

(b) Discuss XML parsing and its applications in web game development.

19. (a) Explain the complete process of player movement and collision detection in a game.

Or

(b) Discuss designing Game UI with interactions and event handling.

20. (a) Explain Box2D Debug Draw and World Rendering in detail.

Or

(b) Describe asynchronous web page updates with request and response cycle.

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C–7590

Sub. Code
82646

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Game Programming

MOBILE GAME DEVELOPMENT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which OOP concept allows a class to inherit properties from another class?
   (a) Encapsulation (b) Abstraction
   (c) Inheritance (d) Polymorphism

2. Which collection class allows dynamic resizing of elements?
   (a) Array (b) Vector
   (c) Array List (d) Enumeration

3. Which method is used to start a thread in Java?
   (a) run() (b) execute()
   (c) start() (d) init()

4. Synchronization is mainly used to:
   (a) Improve UI design
   (b) Avoid thread interference
   (c) Increase memory
   (d) Create objects

5. In a mobile OS, an Activity represents;
   (a) Background task
   (b) Database
   (c) User Interface screen
   (d) Compiler

6. An emulator is used to,
   (a) Design graphics
   (b) Test apps without a physical device
   (c) Compile Java code
   (d) Store assets

7. SpriteBatch in game development is mainly used for:
   (a) Physics simulation
   (b) Rendering textures efficiently
   (c) Handling sensors
   (d) Playing sound

8. Texture Atlas helps to;
   (a) Combine multiple images mo one texture
   (b) Increase gravity
   (c) Detect gestures
   (d) Run threads

9. Parallax scrolling is used to create;
   (a) Collision detection
   (b) Background depth effect
   (c) Thread safety
   (d) Exception handling

10. Gravity in the physics engine affects:
   (a) Camera zoom
   (b) Game score
   (c) Movement of physics bodies
   (d) Screen resolution

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain inheritance in Java with suitable examples. Discuss different types of inheritance.

Or

(b) Describe method overloading and method overriding with examples.

12. (a) Explain multithreading using the Thread class and the Runnable interface.

Or

(b) Discuss synchronization and exception handling in Java.

13. (a) Explain the structure of a mobile operating system. Discuss Activity and Service.

Or

(b) Explain working with Views and Layouts in mobile application development.

14. (a) Explain the Game Life Cycle and the role of SpriteBatch in game development.

Or

(b) Discuss texture atlas, sprite animation and camera setup in game development.

15. (a) Explain screen transitions and handling sensors in mobile games.

Or

(b) Describe parallax scrolling and particle effects implementation in games.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain OOPS concepts in Java, including abstraction, encapsulation, inheritance and polymorphism with examples.

Or

(b) Discuss the Collections framework and generic classes in Java. Explain ArrayList, Vector, and Enumeration with examples.

17. (a) Explain the thread life cycle and multithreading with suitable program examples.

Or

(b) Discuss synchronization problems and exception handling mechanisms in Java with examples.

18. (a) Explain the mobile development environment, build system, emulator and running applications.

Or

(b) Describe input implementation and parsing external files in mobile applications.

19. (a) Explain game development framework components, including Game class, screen interface, viewports and rendering process.

Or

(b) Explain sprite animation, input handling, and particle effects in game development.

20. (a) Explain the integration of the physics engine in games. Discuss gravity, physics bodies, and collision handling.

Or

(b) Describe the steps involved in developing a complete mobile game, including level design and event handling.

C–7591

Sub. Code
82651

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Game Programming

ARTIFICIAL INTELLIGENCE FOR GAMES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which AI technique focuses on search problems and their solutions?

   (a) A*Algorithm
   (b) Rule-based AI
   (c) Neural Networks
   (d) Problem Space Search

2. What is the main challenge in designing search programs in AI?

   (a) Limiting the computational power

   (b) Managing the problem space efficiently

   (c) Ensuring real-time execution

   (d) Generating random paths

3. Which AI method is most commonly used in games for creating non-player characters (NPCs) with simple behaviors?

(a) Patterned Roaming
(b) Behavioral AI
(c) Genetic Algorithms
(d) Neural Network

4. Backtracking in AI is typically used for:

(a) Game decision-making
(b) Learning pattern from data
(c) Finding a solution in a search space
(d) Generating random decisions

5. The primary goal of creating strategically AI in games is to:

(a) Simulate realistic player behavior
(b) Generate random game scenarios
(c) Improve NPC decision-making
(d) Create aesthetically pleasing visuals

6. Pathfinding algorithms like A* are crucial for which aspect of game AI?

(a) NPC interactions
(b) Finding the shortest route through obstacles
(c) Managing player input
(d) Generating random game worlds

7. Which of the following best describes Fuzzy Logic in Game AI?

(a) It creates fixed rules for NPC actions

(b) It simulates player strategies

(c) It generates random behaviors for characters

(d) It allow decision-making in situations with uncertain or vague information

8. Which of these is NOT a feature of Finite State Machines in AI?

(a) Sequential state transitions

(b) Random decision-making

(c) A fixed set of states

(d) Defined state behavior

9. Genetic Algorithms are used in AI to:

(a) Predict future events

(b) Evolve solutions to complex problems

(c) Design random scenarios

(d) Simulate human emotions

10. The Dempster-Shafer theory is primarily used for:

(a) Modeling uncertainty and belief functions

(b) Generating random solutions

(c) Simulating human actions in games

(d) Building decision trees

Part B

$(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Define "State Space Search" and explain its role in problem-solving within AI systems.

Or

(b) Discuss the importance of defining problems and criteria for success in AI systems.

12. (a) What is the importance of backtracking in AI and how is it implemented in game AI?

Or

(b) Explain the Concept of Roaming AI and its application in AI-based games.

13. (a) Compare and contrast deterministic and non-deterministic systems in AI.

Or

(b) Describe how pathfinding algorithms like A* can be applied to game AI for navigation purpose.

14. (a) Explain the role of knowledge representation in AI systems. Discuss its importance in game AI.

Or

(b) What are the different techniques used in AI to represent knowledge and how do they affect game development?

15. (a) Discuss how expert systems function and their role in providing intelligent solutions for game AI.

Or

(b) Analyze the impact of combining different AI techniques for the creation of intelligent agents in games.

Part C $(5 \times 8 = 40)$

Answer **all** questions, choosing either (a) or (b).

16. (a) Discuss the role of Strategic AI in games an how it enhance game play experiences.

Or

(b) Analyze the application of Behavioral AI and State Change in creating dynamic game environments.

17. (a) Explain the various types of knowledge representation used in AI and their implications for game development.

Or

(b) Discuss the production-based system in AI and its role in enhancing problem-solving in game.

18. (a) Explain how Genetic Algorithms and Neural Networks can be integrated into game AI systems.

Or

(b) Analyze the role of Rule-based Systems and Finite State Machines in creating intelligent AI behaviors in games.

19. (a) Discuss how techniques like Flocking AI, Steering AI and Pathfinding contribute to creating immersive and challenging game worlds.

Or

(b) Explore how strategic AI influences decision-making in complex game environments.

20. (a) Discuss the architecture and applications of Expert Systems in AI and their impact on game design.

Or

(b) Predict the future of AI in the gaming industry, focusing on emerging trends and technologies.

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C–7592

Sub. Code
82652

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Game Programming

GAME PROGRAMMING PATTERNS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the purpose of design patterns in object-oriented programming?
   (a) To increase the complexity of the system
   (b) To solve problem in a standardized way
   (c) To reduce software modularity
   (d) To minimize code readability

2. Which of the following design patterns is a creational patterns?
   (a) Observer (b) Abstract Factory
   (c) Composite (d) Strategy

3. The Adapter pattern is useful for:
   (a) Allowing incompatible interfaces to work together
   (b) Simplifying complex subsystems
   (c) Storing configurations in an organized manner
   (d) Creating new game entities

4. In which design pattern is a single instance of a class used throughout the application?

(a) Prototype (b) Singleton

(c) Builder (d) Chain of Responsibility

5. The flyweight design pattern helps in :

(a) Creating new objects at runtime

(b) Reducing memory usage by sharing objects

(c) Managing different game levels

(d) Handling game actions with a unified interface

6. Which design pattern helps to combine multiple objects into a single object?

(a) Chain of Responsibility

(b) Composite

(c) Proxy

(d) Facade

7. The Memento design pattern is used to:

(a) Track the history of game states

(b) Handle user input for multiple actions

(c) Manage complex game mechanics

(d) Simply game entity interactions

8. Which design pattern is associated with delegating requests to a handler in a chain?

(a) Proxy (b) Chain of Responsibility

(c) State (d) Command

9. The Observer design pattern is used for:

(a) Triggering actions based on state changes

(b) Modifying game mechanic dynamically

(c) Managing memory allocation

(d) Managing user interfaces

10. The Facade pattern simplifies:
    (a) User interface complexity
    (b) Communication between objects in a system
    (c) Resource management in games
    (d) Object creation in the system

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the concept of the Prototype design pattern and its application in game development.

Or

(b) Discuss the role of the Builder pattern in managing complex game object creation.

12. (a) How does the Chain of Responsibility pattern allow flexible handling of multiple game requests?

Or

(b) Describe the use of the Strategy design pattern for game behavior changes.

13. (a) Explain the role of the Flyweight pattern in reducing memory usage in games.

Or

(b) Discuss how the command pattern simplifies handling game actions.

14. (a) How does the Adapter pattern help in integrating legacy systems into modern game application?

Or

(b) Describe the State pattern and its use in managing different character states in a game.

15. (a) Explain the application of the Template Method design pattern in game-level design.

Or

(b) Discuss the advantages of using the Mediator pattern in multiplayer game systems.

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Compare the use of Observer and Mediator design patterns in managing events and interactions in a multiplayer game.

Or

(b) Discuss how Command and Chain of Responsibility patterns can be combined for effective game state management.

17. (a) Explain how Singleton and Prototype patterns are used to manage game object instances efficiently.

Or

(b) Discuss the role of the Decorator pattern in extending the functionality of existing game objects.

18. (a) How does the Composite pattern simplify hierarchical game object management?

Or

(b) Discuss the use of Flyweight and Proxy pattern in optimizing game performance.

19. (a) Describe the implements of the Adapter pattern in solving compatibility issues between game systems.

Or

(b) Explain the benefits of using Observer and "State" pattern together in a real-time game scenario.

20. (a) Analyze the use of the Strategy and Template Method design patterns in game AI development.

Or

(b) Discuss the role of Factory Method and Abstract Factory patterns in managing object creation for various game levels.

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C–7595	Sub. Code 82661

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Game Programming

GAME WRITING ESSENTIALS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which storytelling approach allows the player to influence the plot through choices?

   (a) Linear storytelling

   (b) Interactive storytelling

   (c) Monologue

   (d) Exposition

2. In game writing, "lore" refers to:

   (a) Background music

   (b) The visual style of a game

   (c) The backstory, history, and myths of the game world

   (d) Character voice acting

3. Which of the following is a common structure used in storytelling?

(a) The Hero's Journey

(b) The Designer's Path

(c) The Player's Loop

(d) The Level Map

4. A protagonist in a game narrative is:

(a) The main character who drives the story

(b) The opponent of the main character

(c) A side quest giver

(d) The game designer

5. Environmental storytelling" primarily involves:

(a) Dialogue trees

(b) Using the game world's design to convey story elements

(c) Cutscenes only

(d) Game menus

6. Which term refers to the consistency of culture, history, and events in a game world?

(a) Lore coherence

(b) World design

(c) Gameplay loop

(d) Environmental coding

7. Branching narratives are designed to:

(a) Force the player down one set path

(b) Allow multiple choices leading to different outcomes

(c) Reduce the number of dialogue lines

(d) Remove player agency

8. Dialogue trees in games are mainly used for:

(a) Navigating menus

(b) Providing multiple conversation options to the player

(c) Game loading sequences

(d) Displaying achievements

9. Which genre often features extensive lore and multiple branching storylines?

(a) Puzzle games

(b) Role-playing games (RPGS)

(c) Racing games

(d) Platformers

10. Balancing narrative with gameplay mechanics is especially important in:

(a) Game writing for multiple genres

(b) Game physics coding

(c) Soundtrack composition

(d) Graphic optimization

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Differentiate between linear and interactive storytelling with examples.

Or

(b) Explain the role of narrative in enhancing player engagement.

12. (a) Describe the Hero's Journey structure in game narratives.

Or

(b) Discuss the techniques for creating compelling protagonists and antagonists.

13. (a) Explain environmental storytelling with suitable examples.

Or

(b) Describe the process of developing consistent lore in a game world.

14. (a) Explain branching narratives and their importance in player agency.

Or

(b) Describe the process of creating interactive dialogue systems.

15. (a) Discuss how narrative techniques vary across different game genres.

Or

(b) Explain the collaboration process between writers, designers and programmers in game development

Part C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the impact of narrative on gameplay with examples.

Or

(b) Describe the key terminology used in game writing and their significance.

17. (a) Discuss the role of character arcs in maintaining player engagement

Or

(b) Explain the use of dialogue and monologue to convey emotions and information.

18. (a) Describe the techniques for creating immersive game worlds.

Or

(b) Explain how environmental storytelling enhances the player's experience.

19. (a) Discuss non-linear storytelling and its role in creating multiple endings.

Or

(b) Explain the process of constructing meaningful choices with consequences.

20. (a) Describe how narrative elements are adapted to RPG and action-adventure genres.

Or

(b) Discuss a case study of narrative integration in a well-known video game.

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C–7596

Sub. Code
82662

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Game Programming

ADVANCED GAME MECHANICS

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

SECTION A (10 × 1 = 10)

Answer **all** questions.

1. Which term best describes the rules and systems that define how a game operates?

   (a) Dynamics

   (b) Mechanics

   (c) Aesthetics

   (d) Flow

2. Which of the following is NOT a gameplay mechanic category?

   (a) Resource management

   (b) Exploration

   (c) Player agency

   (d) Dialogue branching

3. In the MDA framework, "Dynamics" refers to:

(a) The visual style of the game

(b) Player interactions and system behavior over time

(c) Rules of the game

(d) The emotional responses from the player

4. The "Aesthetics" component in the MDA framework focuses on:

(a) Game graphics quality

(b) Game balance and difficulty

(c) The emotional experience of the player

(d) The coding process

5. Which concept refers to the optimal balance between challenge and skill?

(a) Player agency

(b) Flow state

(c) Orthogonality

(d) Feedback loop

6. Which of the following can help maintain engagement in games?

(a) Sudden difficulty spikes

(b) Proper pacing and progression

(c) Removing feedback

(d) Reducing interactivity

7. Sensory fun" in games refers to:

(a) Enjoyment from exploring game lore

(b) Enjoyment from visuals, sounds, and tactile feedback

(c) Enjoyment from competition

(d) Enjoyment from solving puzzles

8. Catering to different player types helps in:

(a) Increasing file size

(b) Enhancing overall player satisfaction

(c) Reducing complexity

(d) Avoiding competition

9. Orthogonality in game mechanics means:

(a) All features overlap in functionality

(b) Features are independent and provide unique choices

(c) Only linear progression exists

(d) Players are restricted to one strategy

10. A "tension map" is used in game design to:

(a) Track player stress and excitement

(b) Measure game file compression

(c) Monitor server load

(d) Create difficulty settings

SECTION B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the historical evolution of gameplay mechanics.

Or

(b) Describe the role of gameplay mechanics in game design.

12. (a) Explain the MDA framework and its three components.

Or

(b) Discuss the role of the MDA framework in game design iteration.

13. (a) Describe the concept of flow state in gaming with examples.

Or

(b) Explain strategies for maintaining engagement through pacing and progression.

14. (a) Discuss the different types of fun in games with examples.

Or

(b) Explain how games can cater to different types of players.

15. (a) Explain orthogonality in gameplay design with examples.

Or

(b) Describe the purpose and use of tension maps in games.

SECTION C (5 × 8 = 40)

Answer **all** questions, choosing either (a) or (b).

16. (a) Explain the core concepts of gameplay mechanics and their importance in game design.

Or

(b) Discuss the various gameplay mechanic categories with examples.

17. (a) Describe the breakdown of Mechanics, Dynamics, and Aesthetics in detail.

Or

(b) Explain how tuning gameplay mechanics can be done using the MDA framework.

18. (a) Discuss the factors influencing flow state and how to achieve it.

Or

(b) Explain feedback systems and their impact on player engagement.

19. (a) Discuss in detail the types of fun and how they impact player experience.

Or

(b) Explain how skill vs. difficulty balance affects player satisfaction.

20. (a) Explain affordability in gameplay design with examples.

Or

(b) Discuss the role of orthogonality and tension maps in designing compelling mechanics.

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