B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Game Design and Development

PROFESSIONAL CONTEXT TECHNOLOGIES AND COMMUNICATION METHODS

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   Define influence map.

2.   Explain the function of orthogonal lines.

3.   Define Game Loop.

4.   What exactly are social games?

5.   What are the elements will be created in Level design?

6.   Define Audio Object Vocabulary.

7.   What is the use of Dice in a game?

8.   Explain combination conditions.

9.   Who are called as default players?

10. Define Gamer Communities.

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

11. (a) Write a note on the evolution of games from 8 bit games to virtual reality games.

Or

(b) What is the role of Non-Playing characters in video games?

12. (a) What is the odds game probability?

Or

(b) Explain linear game plot.

13. (a) What is called as Broken Gameplay?

Or

(b) What are the elements of Gamification?

14. (a) Write about Open Worlds.

Or

(b) What is called as Game Mechanics?

15. (a) What is the use of victory points?

Or

(b) Explain Bartle's Taxonomy of Player types.

Part C (3 × 10 = 30)

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

16. (a) Explain Mechanics, Dynamics and Aesthetics of video games.

Or

(b) How augmented reality blending information, media, user interfaces and virtual entities with real world elements? Explain.

C–5114

17. (a) Write an essay on the creative freedom of a player in a gameplay.

Or

(b) Explain the anatomical knowledge and physical cues used in well-known game characters.

18. (a) Explain the elements of a game which induce a player to feel and focus on the game.

Or

(b) Take an online Android game and analyze the demography and psycho analysis of the players.

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B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Game Design and Development

VISUALIZATION FOR GAMES

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   What is a Vanishing point?

2.   Define perspective.

3.   What do you mean by Figure ground?

4.   Define Focal point.

5.   What is the additive blending?

6.   What is meant by Geometric in designing?

7.   What is an inverted texture?

8.   Define Scale.

9.   What is purpose of storyboard?

10.   What is a Transition?

Part B   (5 × 5 = 25)

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

11. (a) Differentiate linear perspective and aerial perspective.

                        Or

    (b) Write a note on Foreshortening.

12. (a) Write a note on the importance of contour drawing.

                        Or

    (b) Sketch few figures based on the twisting and turning along the spine.

13. (a) Write a note on the types of Balance.

                        Or

    (b) Write a short note on Dominance and Priority.

14. (a) What are the applications of texture?

                        Or

    (b) What is the difference between scale and proportion in design?

15. (a) Write a note on different types of shots.

                        Or

    (b) Mention the importance of usage of storyboards in concept art.

                    Part C   (3 × 10 = 30)

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

16. (a) Write a detail note on the different types of perspectives.

                        Or

    (b) Explain the detail about the various steps involved in the process of stick figure drawing with sketches.

                        2   **C–5115**

17. (a) Write a detail note Color theory.

Or

(b) Discuss the importance of dodging and burning in colour blending.

18. (a) Write a detail note on basic elements of composition.

Or

(b) Write in detail about the various types of Transitions.

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C–5115

C–2143	Sub. Code
	83424

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Game Design and Development

2D GAME ART

(2019 – onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   What is Vector Graphics?

2.   Define Pixel.

3.   What is the use of smudge tool?

4.   Define Interface.

5.   What does a transformation scale do?

6.   What is a gradient in image processing?

7.   What is the use of a brush tool?

8.   What is a 2D logo?

9.   Define sprite.

10.   What is a Digital painting?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the different kinds of image file formats?

Or

(b) Write a note on the types of graphics.

12. (a) What are the different methods to select some portion from images? Write complete flow for using that tool.

Or

(b) Write a brief note on Swatches Palettes.

13. (a) How will you apply photoshop layer styles and share them between layers?

Or

(b) Write a short note the basic functions of brushes in Photoshop.

14. (a) What are the qualities of a good logo?

Or

(b) Explain how we can create a Clipping Mask.

15. (a) What are the different types of Sprite sheets?

Or

(b) Mention the steps involved in creating new asset pack for uploading assets.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write a detail note on the principles and techniques of image manipulation.

Or

(b) Discuss hue, brightness and saturation? What is the difference between them?

2   **C–2143**

17. (a) Write a detail note on the various plugins of Illustrator.

Or

(b) What are small objects and how you can use them effectively? Give the steps involved in creating a smart object.

18. (a) Write a note on :

(i) Marquee Selection Tool

(ii) Magic Wand Selection Tool

(iii) Dodge and burn Tool

(iv) Eyedropper Tool

(v) Lasso selection Tool.

Or

(b) Write in detail about the Matte painting and its application.

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3   **C–2143**

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Game Design and Development

GAME ENGINE – I

(2019 onwards)

Duration : 3 Hours　　　　　　　　Maximum : 75 Marks

Part A　　　　　　　(10 × 2 = 20)

Answer **all** questions.

1.　Define Clean up code.

2.　What are the classifications in importing model?

3.　Write down the types of Joints.

4.　What is Generic function?

5.　How Navigation works?

6.　Mention about Triggers.

7.　Write down the components of mesh.

8.　What are the compositions of mesh filter?

9.　What is 3D physics?

10.　Define Host and Spawn.

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

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

11. (a) How to make a simple 3D game? Write down the instructions involved in it.

Or

(b) Brief note on the concepts of 2D an d 3D Game Development.

12. (a) Elaborate on Memory Optimization.

Or

(b) Write down on measures and its types.

13. (a) Discuss on Terrain Designs.

Or

(b) Analyze the characteristics and properties of Camera.

14. (a) Describe Outdoor navigation based on 3D game.

Or

(b) How does path finding work in Video Games?

15. (a) Write down the App Developers work with UI Designers.

Or

(b) Summarize about the Networking concepts that Games use in it.

C–5116

Part C (3 × 10 = 30)

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

16. (a) Elaborate on the fundamental structure of a 2D and 3D Game development.

Or

(b) Discuss the concepts of Screen Dimensions in 3D Game World.

17. (a) Elaborate about UI Design Games.

Or

(b) Brief in detail about the overall concept of event handling and frame rate performance.

18. (a) Write down the process in setting up the Game environment and explain ways of handling the frame rate.

Or

(b) Elaborate on basic UI layout and information sharing to HUD.

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3 **C–5116**

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Game Design and Development

DIGITAL MODELING - I

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   Tell about the "Insert Knot".

2.   Infer about the maya workspace.

3.   What is Bevel Plus?

4.   Write a note on Surface Fillet.

5.   Infer the key points on UV wrapping.

6.   Compare Specular and Reflection maps.

7.   Discuss shortly on Rebuild curve.

8.   Tell about the Extend curve.

9.   Write about the Visor Polygon Tool.

10.   Write a note on Creating assets.

Part B   (5 × 5 = 25)

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

(Brief answer)

11. (a) Briefly explain about Project Tangent.

Or

(b) Discuss on the User Interface.

12. (a) Write a short note on NURBS Primitives.

Or

(b) Outline the various prospects of Project curve on Surface.

13. (a) Write a short note on UV unwrapping.

Or

(b) Detail about the Character blocking.

14. (a) Write about the "Add points tool" used in digital modeling of games.

Or

(b) Discuss about the EP Curve Tool.

15. (a) Briefly discuss the Game Environment Modeling.

Or

(b) Write about the Characters layout and their requirements.

C–5117

Part C (3 × 10 = 30)

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

(Essay Type)

16. (a) Elaborate about the creating, manipulating and moving objects.

Or

(b) Briefly explain about the Trim tool and its features.

17. (a) Explain in detail about the Vehicle dynamics and their design.

Or

(b) Briefly illustrate the characters layout as per the gaming requirements.

18. (a) Briefly explain about the various curves used for game modeling.

Or

(b) Discuss in detail about the UV Texturing and Lighting.

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3   **C–5117**

C–5118	Sub. Code
	83434

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Game Design and Development

WEB GAME DEVELOPMENT

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1. What is Hyper Text Mark-up language?

2. Mention any three new elements added in HTML 5.

3. Define Header and Footer.

4. Define Arrays.

5. Give the key points on Callback functions.

6. What is Canvas?

7. Write down any two properties of Collision Detection.

8. Which is the best framework to build a Website? Justify.

9. Define Image Slider.

10. List out the various keyboard events in JavaScript.

Part B (5 × 5 = 25)

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

11. (a) What is HTML 4 and HTML 5? and write down the key differences between them.

Or

(b) Detail on SVG and Canvas with suitable examples and state the differences between them.

12. (a) Discuss about the process to create a Custom Callback in JavaScript.

Or

(b) Explain Non-anonymous Callback function with examples and state their output.

13. (a) Explain the importance and benefits of web interactivity, and why it is important?

Or

(b) Summarize on the different web frameworks with suitable examples.

14. (a) How to build a simple sprite animation in JavaScript?

Or

(b) Distinguish between a Game Developer and Game Programmer.

15. (a) Write down about the introduction and properties of keyboard events in JavaScript.

Or

(b) Mention the steps involved in Handling keyboard event with suitable illustrations.

2 <div>**C–5118**</div>

Part C (3 × 10 = 30)

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

16. (a) Discuss in detail about semantic tags, elements, properties and its applications with examples.

Or

(b) How do you add media tags, audio and video tags in HTML? Explain them.

17. (a) Explain in detail about development methods for developing games.

Or

(b) Brief about XML and JSON parsing, and give their types, examples and differences.

18. (a) Write down the code to import CSV files in JavaScript.

Or

(b) Write in detail about the advancements in JavaScript.

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C–5121		Sub. Code
		83451

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Game Design and Development

GAME ENGINE – II

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   What is mesh in video games?

2.   Define Binary Space Partitioning.

3.   What are particles in games?

4.   What is Destructive Mesh?

5.   Explain styling.

6.   What is Asset Packaging?

7.   Explain Death Animation.

8.   Define Health Bar.

9.   What is the difference between checkpoint and endpoint?

10.   What is the use of AT Behavior toolkit?

Part B (5 × 5 = 25)

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

11. (a) How to create and edit a Terrain for game?

Or

(b) What is the difference between shaders and textures?

12. (a) Write about Level Streaming Volumes.

Or

(b) How is game cinematics made?

13. (a) Why set the tone important to the main menu of a game?

Or

(b) Write a short note on Health systems in games.

14. (a) Explain collecting, scoring and building the game from player perspective.

Or

(b) Explain the concept of shrinking game area using PUBG.

15. (a) Which objects can be used to display a pop-up message?

Or

(b) What are structured and unstructured meshes? Draw examples.

2 **C–5121**

Part C (3 × 10 = 30)

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

16. (a) Write an essay on material creation for games; explain the modern ways to create assets.

Or

(b) How to achieve realistic lighting for a game? Explain the properties of a light source and techniques.

17. (a) Answer the following:

(i) What exactly is a skeletal mesh?

(ii) How to find a skeletal mesh in the browser?

(iii) How to create a new skeletal mesh group in matinee?

(iv) How to clear or assign a skeletal mesh to an existing skeletal mesh group?

(v) Positioning a skeletal mesh

Or

(b) Explain the objectives of HUD Blueprint and the key features of Player controllers.

18. (a) Take any android game and explain the basic mechanisms of the player activities.

Or

(b) Write an essay on decorating a level, getting it ready to be used by players in the game.

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3 **C–5121**

C–5122	Sub. Code
	83454

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Game Design and Development

ARTIFICIAL INTELLIGENCE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Abbreviate AI.

2. What is known as Knowledge Engineering?

3. What do you mean by Pac Man?

4. Define an expert System.

5. Abbreviate ANNS.

6. What is fuzzy logic used for?

7. What is meant by pruning?

8. Define inferential Knowledge.

9. Give two examples of Heuristics.

10. What are the sources of Knowledge Acquisition?

Part B   (5 × 5 = 25)

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

11. (a) What is AI Technique? Explain Tic Tac Toe problem using AI technique.

Or

(b) Write a note on Problem solving methods in artificial intelligence.

12. (a) Differentiate between Game AI and AI.

Or

(b) Write a brief note on the types of AI.

13. (a) Write a note on Classical Flocking.

Or

(b) What are the steering behaviours for autonomous characters.

14. (a) What are the advantages and disadvantages of procedural Knowledge?

Or

(b) Write a note on Fuzzy logic reasoning.

15. (a) Write a note on the benefits of expert systems.

Or

(b) Mention the process involved in expert system development.

2   **C–5122**

Part C   (3 × 10 = 30)

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

16. (a) Write a detail note on the various AI techniques.

Or

(b) Write in detail about line of sight chasing in continuous environment.

17. (a) Write a detail note on the various applications of Neural Networks.

Or

(b) Discuss the different approaches to reasoning under uncertainties.

18. (a) Write a detail note on the various components of expert system.

Or

(b) Write in detail about the characteristics of Expert System.

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3   **C–5122**

C–5123	Sub. Code
	83455A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Game Design and Development

EMERGING TRENDS

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   What is meant by Sensation?

2.   Define Yaw

3.   What is a quaternion?

4.   What is meant by canonical transformation?

5.   What are the three parameters needed to object orientation?

6.   What are the three of DOFs that correspond to its changing position in space?

7.   Define SURF.

8.   What is meant by Augmented Reality?

9.   Where are pneumatic actuators used?

10. Abbreviate IoT.

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

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

11. (a) What are the purposes of VR?

Or

(b) Give a note on the process of Sensation and Perception.

12. (a) Write a note on affine transformation?

Or

(b) What are the uses of Quaternions?

13. (a) What are the physical properties of light

Or

(b) Write a short note on PnP?

14. (a) Differentiate between VR and AR.

Or

(b) Write a note on SURF.

15. (a) Write a note on the components of IoT.

Or

(b) What are the different types of Sensors in IoT.

Part C $(3 \times 10 = 30)$

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

16. (a) Explain in detail about the types of geometric models in VR.

Or

(b) Write in detail about human psychology and perception.

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C–5123

17. (a) Write a detail note on Orientation tracking.

    Or

    (b) Explain the various modern day applications of IoT.

18. (a) Video games affect behavior – Discuss.

    Or

    (b) Write in detail about the various features extraction techniques.

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C–5123

C–5124	Sub. Code
	83455B

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Game Design and Development

LEVEL DESIGN

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   Define Level Design

2.   Define mock up.

3.   What do you mean by wind zones?

4.   Abbreviate DGDB.

5.   What is the use of Foliage tool?

6.   What is meant by Difficulty Curve?

7.   What is Phong illumination?

8.   What is meant by Gamma color space?

9.   Abbreviate LDD.

10.   What does RPG stand for in a game?

Part B   (5 × 5 = 25)

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

11. (a) Write a note on the basic process of level design.

           Or

   (b) What is the difference between endless game and level based games?

12. (a) What are the options of tool bar to adjust terrain?

           Or

   (b) How do you import and export terrain texture layers?

13. (a) Discuss about the factors of the game which increase the difficulty of game.

           Or

   (b) "A fun game is a balanced game and a balanced game is a fun game"- Discuss.

14. (a) Give a brief note on the importance of lighting in level designs.

           Or

   (b) Write a note on Occlusion Shaders.

15. (a) Write a note on Role playing games.

           Or

   (b) Write a note on Level Design Document.

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Part C   (3 × 10 = 30)

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

16. (a) Explain in detail the various stages of process in designing a video game level.

    Or

    (b) Discuss in detail about the importance and application of Game Tree.

17. (a) Write a detail note the different types of light.

    Or

    (b) Discuss in detail about the goals that affect the game play at different levels.

18. (a) Discuss in detail about the contents and the formats of LDD.

    Or

    (b) "Game development can be one of the most satisfying creative pursuits"- Justify

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3   C–5124

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Game Design and Development

GAME PSYCHOLOGY

(2019 onwards)

Duration : 3 Hours   Maximum : 75 Marks

Part A   (10 × 2 = 20)

Answer **all** questions.

1.   Define Psychology

2.   What do you mean by Stimulus Delta

3.   What is G-factor

4.   What do you understand by the term Semantic Memoxy

5.   What are Hygiene Factors

6.   Define Polygraph

7.   What is meant by Cognition

8.   Define Gamification

9.   Define Game Theory

10.   Give two application of VR

Part B (5 × 5 = 25)

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

11. (a) What are the five basic concepts of Psychology

Or

(b) Write a note on the different types of behaviouirism

12. (a) Discuss the causes of forgetting.

Or

(b) Write a short note on Semantic memory

13. (a) Differentiate between Classical and operant conditioning.

Or

(b) Write a note on Maslow's Hierarchy of Needs.

14. (a) Write a short note on game theory.

Or

(b) Violence in Games-Discuss

15. (a) How does gamification differ from playing games.

Or

(b) What are the benefits of gamification in e-learning.

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Part C (3 × 10 = 30)

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

16. (a) Write in detail about the application of Psychology in different fields.

    Or

    (b) Write in detail about the various theories of Motivation.

17. (a) Write in elaborate about Gardner's theory and the types of intelligence proposed.

    Or

    (b) Role of Game in Gender issues — Discuss

18. (a) Explain in detail about the games in contemporary society and its future.

    Or

    (b) Discuss about the social and emotional consequences of games among children.

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3 **C–5125**