C–8490	Sub. Code
	83413

B.Sc. DEGREE EXAMINATION, APRIL 2023.

First Semester

Game Design And Development

PROFESSIONAL CONTEXT TECHNOLOGY AND COMMUNICATION METHODS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define barriers in communication

2. List the types of players.

3. What is branching tree?

4. Write a note on probability in games.

5. Summarize about the value of aesthetics.

6. Compare real and virtual architecture.

7. Discuss shortly on imagination in games.

8. Tell about the methodologies in game balancing.

9. Write about the ethics in game design.

10. Write a note on psychographics.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain about core dynamics in game design.

Or

(b) Discuss on the tension maps in game design.

12. (a) Discuss about the dramatic elements of a game.

Or

(b) Outline the various prospects in structuring a game.

13. (a) Write a short note on Transmedia world.

Or

(b) Write about the allocating and organizing of space in game design.

14. (a) Write about the games and experience as a video game player.

Or

(b) Discuss about the game economics and its balancing in game design.

15. (a) Briefly write about the taxonomy of players.

Or

(b) Write about the communities and its strength in games.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Elaborate technically about the Game mechanics.

Or

(b) Briefly explain about the dynamics of player taxonomy.

17. (a) Explain in detail about the loop of interaction in the games.

Or

(b) Briefly illustrate the evolution of games.

18. (a) Explain in detail about the dynamics in game balancing.

Or

(b) Create a proper Game design document for any concept of your choice.

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C–8491	Sub. Code
	83414

B.Sc. DEGREE EXAMINATION, APRIL 2023.

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. Infer about the vanishing point.

2. What do you mean by line of action?

3. Differentiate contour drawing and cylindrical drawing.

4. Tell about the quick sketches.

5. Give the characteristics of a visual composition.

6. Write short notes on color blending.

7. Summarize on foreground color in textures.

8. List out the useful tips on creating a texture.

9. Write short note on script formatting.

10. Tell about the cartoony in game development.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Distinguish linear and aerial perspectives.

Or

(b) Differentiate one point and two point perspectives.

12. (a) Write about the proportion and gesture in human figure drawing.

Or

(b) Explain the influence of quick sketches and studies in live figure.

13. (a) Discuss in detail about the color psychology.

Or

(b) Write briefly about the Gestalt principles.

14. (a) Brief the steps in creating texture using live reference.

Or

(b) Write short note on study of different environment in gaming fields.

15. (a) Detail about the architecture and silhouettes.

Or

(b) Discuss in detail about props and weapon design.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Elaborate on the perspective terminology.

Or

(b) Explain about the constructing front view using basic shapes.

17. (a) Explain the color theory.

Or

(b) Explain in detail about understanding scale and proportion and creating textures using live reference.

18. (a) Explain in detail the step by step process of storytelling.

Or

(b) Elaborate about the application of texture and colouring in relation to the relevant subject.

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C–8492	Sub. Code
	83423

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Game Design and Development

PROGRAMMING FOR INTERACTIVE MEDIA

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the use of Barcode reader?

2. What is the difference between system software and application software?

3. Define User – defined functions.

4. What is called as next loops in programming?

5. Write about default arguments.

6. Where are multidimensional arrays used?

7. What are class templates in C++?

8. Define Object – oriented programming.

9. What is deque used for?

10. How sequences are used in programming?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a note on Memory Management.

Or

(b) Write a note on the Central Processing Unit.

12. (a) Write a note on Arithmetic Operators.

Or

(b) Differences between constants and variables in programming.

13. (a) What is the difference between function and function pointer?

Or

(b) What is a two dimensional array in C Language?

14. (a) What are the benefits of exception handling?

Or

(b) What is polymorphism in windows programming?

15. (a) Write about vectors for processing programmers.

Or

(b) What are the elements provided by STL in C++?

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on programming languages like Python, Java, Javascript, Ruby and C++.

Or

(b) What are the eight main parts of a computer? Explain.

17. (a) What is the purpose of inline function in C and C++ programming language? Explain.

Or

(b) Write an essay on different dimensional arrays and how it related to pointers.

18. (a) Explain the key concepts of OOP, how data abstraction plays an essential role in programming.

Or

(b) How Pseudo Random Number Generator PRNG works in various programming languages? Explain with Java and Swift languages examples.

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C–8493	Sub. Code
	83424

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. Write about typography.

2. How computer graphics is useful in image processing?

3. What is the use of white balance?

4. Define gradient.

5. Write about layer grouping.

6. How opacity affects the image?

7. Write about vector graphics editors.

8. What is slicing?

9. Define vertical orientation.

10. How do you make an 8 bit animation?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) What is image filtering in image processing?

Or

(b) Write about edge detection.

12. (a) Name any two image editing tools and compare its user experience and output quality.

Or

(b) What is the use of a paint bucket tool?

13. (a) Can you wrap a smart object in photoshop?

Or

(b) Explain how to convert a color image into black and white in Photoshop?

14. (a) How to join two paths in Illustrator?

Or

(b) How to import artwork files in Illustrator.

15. (a) Write about the screen modes in Illustrator.

Or

(b) Describe the significance of matte painting.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the history of the following

(i) drawing

(ii) Printmaking

(iii) line art

(iv) illustration

(v) engineering drawings.

Or

(b) Write about image manipulation, concentrate on scaling and cropping.

17. (a) How to create layers in image editing software? Explain the concept of layers panel.

Or

(b) Take any 5 tools which can enhance the image quality in Photoshop and explain how it works?

18. (a) What makes a good logo? Explain the characteristics of the logo.

Or

(b) Explain the sprite sheet, sprite editor and other essential elements for sprite animation.

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C–8494	Sub. Code
	83432

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. Outline the concept of 3D game.

2. List out the different screen dimensions in 3D game.

3. Write short notes about profiler window.

4. Define collusion detection in game deign.

5. Write short notes on raycasting.

6. List out the different type of joints.

7. Outline the uses of lees flares in camers.

8. Define occlusion culling.

9. Write short notes on game UI layout.

10. What are the benefits of clean up code.

Part B (5 × 5 = 25)

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

11. (a) Write in detail about understanding the 2D game.

Or

(b) Organize the working in 3D scene.

12. (a) Outline the profile window in game design.

Or

(b) Write in detail about the function of mesh filter and mouse.

13. (a) Describe the benefits of raycasting in gaming.

Or

(b) Organize the exploring different colliders in games.

14. (a) Write in detail about the rendering to texture in cinematics.

Or

(b) Outline the global illumination in game engine.

15. (a) Describe the importance of sound and music in games.

Or

(b) Write in detail about server and host in networking.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the convert screen position to world positions.

Or

(b) Briefly explain mesh models and opponents.

17. (a) Discuss in detail about the basic 3D methods.

Or

(b) Explain in detail about the rendering sky in games.

18. (a) Examine the memory optimization in gaming.

Or

(b) Elaborate on mechanism of designing game UI.

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C–8495	Sub. Code
	83433

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. What is the purpose of user interface in digital modeling?

2. Define orthographic windows.

3. Write short notes about move seam.

4. Define surface fillet in 3D digital modeling.

5. Write short notes on normal map in digital modeling.

6. What is the importance of refection map?

7. List out the basic prop modelling in weapon design.

8. Define add point tools in weapon design modeling.

9. What programs do environment artists use?

10. List out the importance of custom shape in visor polygonal.

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

Answer **all** questions

11. (a) Write in detail about the maya workspace in 3D digital modeling.

Or

(b) Organize the importance of open/close curve in digital modeling

12. (a) Outline the methods used to extrude a bevel in Blender.

Or

(b) Write in detail about the rebuild surface.

13. (a) Describe the importance of UV texturing in game modeling.

Or

(b) Write in detail about the reflection map.

14. (a) Develop a digital modeling for dagger weapon.

Or

(b) Discuss the methods to insert a curve in maya.

15. (a) Describe the importance of set design for games.

Or

(b) Write in detail about the sculpt polygon tools.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the edit curve and offset curve in digital modeling.

Or

(b) Briefly explain project curve on surface in digital modeling.

17. (a) Discuss in detail about the insert isoparms in digital modeling.

Or

(b) Describe the procedure for vehicle design modeling.

18. (a) Explain in detail about the move scene in weapon deign modeling.

Or

(b) Elaborate on requirements for the set design in digital modeling.

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C–8496	Sub. Code
	83434

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. Write short notes about HTML5?

2. What is the media element tags in HTML?

3. Define one dimensional array.

4. Write short notes on number validation in JavaScript?

5. Outline the framework used in Web development?

6. Define JSON parsing.

7. List out the steps to code a canvas in JavaScript.

8. What is implement jump in 2D games?

9. List out the mouse events in JavaScript.

10. Outline the game UI and UX?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Organize the various properties of video tag.

Or

(b) Compare the difference between SVG and canvas.

12. (a) Describe the difference between get and post method.

Or

(b) Write in detail about 4 types of inheritance in Java?

13. (a) Discuss in detail about the parallax scrolling effect.

Or

(b) Write in detail about the JSON parsing work.

14. (a) Outline the steps involved in animate a sprite in Java.

Or

(b) Organize the methods to make a player movements in Godot.

15. (a) Describe the four types of listeners in Java.

Or

(b) Compare the request and response in web game development.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about the Nav tag in HTML.

Or

(b) Elaborate on methods used for handling forms in java script.

17. (a) Discuss in detail about the advanced java script used in HTML.

Or

(b) Explain in detail about the image sliders and image manipulation.

18. (a) Examine the various steps can take to become a good game developer in game designing.

Or

(b) Elaborate on managing lives and health for game development in java script.

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C–8497	Sub. Code
	83442

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Game Design and Development

DIGITAL MODELING – II

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What files use lossless compression?

2. Why is texture important in photography enhancement?

3. What is the purpose of shading?

4. Define material node.

5. What is a composite image?

6. How does three point lighting work?

7. What are Ambient light sources?

8. What is skeletal mesh?

9. Define Line weight.

10. Why are poly games so low?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the essential graphics file formats?

Or

(b) What is the difference between translucency and transparency?

12. (a) What are the different texture maps for?

Or

(b) Explain Cube mapping.

13. (a) How to use smart layers in Photoshop?

Or

(b) Describe the Rasterization process.

14. (a) Explain rigging and skinning.

Or

(b) What is the animation cycle for engines?

15. (a) Explain portrait morphing.

Or

(b) Write a note on Body Topology.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write a detailed note on the image compression.

Or

(b) Write an essay on different types and uses of textures.

17. (a) Describe the proper steps to unwrap a character model.

Or

(b) Explain the advanced rendering techniques and render pass concepts.

18. (a) Do four colors suffice to color any map? Explain the Four-Color Theorem.

Or

(b) Describe how the outside shell reflects what's inside the character. Explain the idea behind character's shapes.

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C–8498	Sub. Code
	82643/83443

B.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

MOBILE GAME DEVELOPMENT

(Common for B.Sc. (GD & D)/ B.Sc. (GP))

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is dynamic binding?

2. What is the usage of static keyword?

3. Explain method overriding.

4. What is meant by abstract class?

5. Differentiate view vs viewgroup.

6. What are the use of final keyword?

7. What is meant by APK in Android?

8. Difference between RelativeLayout and LinearLayout.

9. What is the use of WebView in Android?

10. What is Dalvik Virtual Machine (DVM)?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain two dimensional array with example.

Or

(b) Explain data abstraction with an example.

12. (a) Differentiate static binding vs late binding.

Or

(b) Write a sample program to demonstrate exception handling.

13. (a) Demonstrate TextureAtlas with an example.

Or

(b) Explain android services with example.

14. (a) Using pixmap class draw a hangman and write the sample code.

Or

(b) Demonstrate titling and other interactions based on sensors.

15. (a) Explain a simple program to demonstrate event handling.

Or

(b) Explain screen transition with example.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain multilevel and hierarchical inheritance with example.

Or

(b) Explain multithreading with an example.

17. (a) Explain the usage of mouse event to demonstrate a player movement inside the screen using mouseclick event.

Or

(b) Explain the usage of InputProcessor in a game class.

18. (a) Explain rectangle collision detection with example.

Or

(b) Explain parallax scrolling in detail with example.

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C–8499	Sub. Code
	83451

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. Define illustration process in game engine.

2. What is diffuse in game development?

3. Write short notes about create a terrain layer.

4. How do you make an empty prefab?

5. What does a game engine contain?

6. How do you add a controller input in game engine?

7. What is the difference between side scroller and platformer?

8. Write short notes about coin pick up.

9. What are some of the advantages of a structured mesh?

10. List out the importance of best lighting for gaming.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write in detail about the types of Transform tools.

Or

(b) Discuss in detail about the landscape editing basics.

12. (a) Outline the importance of destruction meshes unity.

Or

(b) Describe the working of level streaming quick start.

13. (a) Write in detail about the UI widgets.

Or

(b) Discuss in detail about the game pad inputs.

14. (a) Outline the procedures followed in teleport players in Roblox.

Or

(b) Organize the ability cool down system in game engine.

15. (a) Describe the methods to make a movable platform in unity.

Or

(b) Outline the importance of ability and animated pop up messages.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the primitive geometry.

Or

(b) Elaborate on decals and opacity masks in game engine.

17. (a) Discuss in detail about the matinee skeletal mash animations.

Or

(b) Describe in detail about the cascade GPU sprites.

18. (a) Elaborate on working mechanism of fuel system in game engine.

Or

(b) Outline the creating a moving platforms in game engine.

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C–8500	Sub. Code
	83454

B.Sc. DEGREE EXAMINATION, APRIL 2023

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. Write short notes on AI model work?

2. How do you describe a problem space?

3. What is backtracking algorithm technique?

4. List out the types of games in artificial intelligence.

5. Define path finding in AI.

6. What is meant by logic or rule-based approach in AI?

7. Summarize an example of backward chaining.

8. Outline the STRIPS in goal stack planning.

9. List out the role of expert system in AI.

10. What is meant by applied artificial intelligence?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write in detail about problems in AI techniques.

Or

(b) Describe the classifications of production systems in AI.

12. (a) Outline the negative behavioural of artificial intelligence.

Or

(b) Write in detail about methods used to solving a game problems related to AI.

13. (a) Construct a star algorithm in artificial intelligence.

Or

(b) Describe the uses of fuzzy logic in artificial intelligence.

14. (a) Describe the rule-based approach in machine learning.

Or

(b) Organize the importance of Dempster-Shafer theory in AI.

15. (a) Conclude the roles of expert system in artificial intelligence.

Or

(b) Outline the future for AI in game development.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about what are the top 10 potential artificial Intelligence problems that need to be addressed.

Or

(b) Briefly explain chasing and evading in artificial Intelligence.

17. (a) Elaborate on difference between artificial intelligence and neural networks.

Or

(b) Explain in detail about the key differences between rule-based AI and machine learning.

18. (a) Describe the Bayesian network in machine learning.

Or

(b) Conclude the different types of intelligent agents and their functions in artificial intelligence.

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C–8501	Sub. Code
	83455A

B.Sc. DEGREE EXAMINATION, APRIL 2023

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 a virtual reality view?

2. Outline the methods used to rotate a 3 × 3 matrix.

3. List out the purpose of quaternions in game designing.

4. Define canonical view.

5. How do you describe light intensity?

6. Write short notes on camera tracking.

7. Define augmented reality (AR).

8. List out the importance of geometric verification.

9. What do you mean by actuation system?

10. How video games affect the brain negatively?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write in detail about the bird's eye view software.

Or

(b) Describe the digital transformation in gaming technology.

12. (a) Outline the ZYZ Euler angle representation.

Or

(b) Summarize the need of homogeneous coordinates in computer graphics.

13. (a) Organize the methods used to train your eyes for gaming.

Or

(b) Discuss in detail about the perspective n-point problem.

14. (a) Write in detail about explain image sensing and acquisition.

Or

(b) Organize the importance of image acquisition.

15. (a) Classify the sensor networks and its applications.

Or

(b) Summarize the purpose and types of BCI in computer.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the bird's eye view sensation and perception hardware.

Or

(b) Elaborate on pitch yaw and roll animation in gaming.

17. (a) Discuss in detail about the axis-angle representations.

Or

(b) Explain in detail about the depth perception and how does it work.

18. (a) Examine the feature extraction and feature matching in AR.

Or

(b) Elaborate on machine to machine communication in IoT.

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