C–6157	Sub. Code
	83413

B.Sc. DEGREE EXAMINATION, APRIL 2022

First Semester

Game Design and Development

PROFESSIONAL CONTEXT TECHNOLOGY AND COMMUNICATION METHODS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. List out the advantages of communication.
2. What is circumspect behavior?
3. What does linear in gaming mean?
4. Define emergence game design.
5. Write short notes on storytelling game design.
6. How do you explain level design?
7. What does a game modeler do?
8. Define game balancing.
9. List out the types of players.
10. What are Ergodic videogames?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write in detail about the evaluation of games.

Or

(b) Define the MDA framework and how can it help us in understanding game design.

12. (a) Outline the dramatic elements of games.

Or

(b) Write in detail about the branching tree in gaming.

13. (a) Organize the properties of transmedia world.

Or

(b) Describe the values of aesthetics in gaming.

14. (a) Write in detail about player's experience in gaming.

Or

(b) Organize the important of game balancing.

15. (a) Describe the player interactions in games.

Or

(b) Compare the types of communities created around video games.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about the types of fun and types of players.

Or

(b) Briefly explain adding and subtracting mechanics in gaming.

17. (a) Discuss in detail about the real Vs virtual architecture.

Or

(b) Explain in detail about the players experience.

18. (a) Examine the actions and rules followed in games mechanics.

Or

(b) Elaborate on ethics and laws followed in computer game design.

———————

C–6158

Sub. Code
83414

B.Sc. DEGREE EXAMINATION, APRIL 2022

First Semester

Game Design and Development

VISUALIZATION FOR GAMES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Tell about the three point perspective.
2. List the types of perspective views.
3. Draw pictorial representation of contour drawing.
4. Define foreshortening.
5. Give the characteristics of a good game design.
6. What is computer graphics?
7. List the types of texture.
8. List the types of environment.
9. Define Silhouettes.
10. Tell about the storyboards.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the perspective views.

Or

(b) Differentiate two point and three point perspectives.

12. (a) Write short notes on front and side view cylindrical forms.

Or

(b) Explain the essentials of human figure drawing.

13. (a) Discuss in detail about the types of graphics.

Or

(b) Write briefly about the elements of design.

14. (a) Brief the role of colours and their grounding in textures.

Or

(b) Write short note on texture and its types.

15. (a) Detail about revisiting the basics.

Or

(b) Briefly discuss about character sketching and environment sketching.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Elaborate on the elements of story.

Or

(b) Discuss in detail about the linear perspective construction methods.

17. (a) Explain the cognitive learning model.

Or

(b) Explain in detail about types of scenes and script writing.

18. (a) What is texture? Explain the types of texture and useful tips in creating a texture.

Or

(b) Explain about the principles, elements and types of design.

———————

C–6159	Sub. Code
	83423

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Game design and Development

PROGRAMMING FOR INTERACTIVE MEDIA

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is a processor?

2. What is the main function of the memory management unit?

3. What is the purpose of a function in programming?

4. Write about Relational Operators.

5. Explain Pass parameters in C.

6. What is a pointer variable?

7. Define Error-Handling code.

8. What is an overloading?

9. Why do we need an adapter design pattern?

10. Write about Python list.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is called Random Access Memory? How does it work?

Or

(b) What are the roles of Input and Output devices of computers?

12. (a) What are the three types of loops?

Or

(b) Write about "if statements".

13. (a) What are the differences between enum, union and struct in C programming?

Or

(b) Describe the relationship between arrays and pointers in C programming.

14. (a) What is inheritance? Give examples.

Or

(b) What is polymorphism, which are the different types of polymorphism?

15. (a) What is a sequence in pseudocode?

Or

(b) What is binary search in data structure? Give an example.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) What are the main five functions of an operating system? Explain.

Or

(b) Write an essay on the five generations of computers.

17. (a) How many functions are required to create recursive functionality? Explain.

Or

(b) Write the advantages and disadvantages of using pointers. How the concept of pointers is useful in the implementation of data structures?

18. (a) What is virtual and pure virtual function? Explain with examples.

Or

(b) What are the differences between linear and non-linear data structures? Explain.

———————

C–6160

Sub. Code
83424

B.Sc. DEGREE EXAMINATION, APRIL 2022

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 image type?
2. Define transparency.
3. Define vibrance.
4. What is the use of cropping?
5. What is the need of background?
6. Write about blend modes.
7. What is called a logo?
8. Define mesh.
9. What is called an undock panel?
10. Define game assets.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is a filter mask in image processing?

Or

(b) Why convolution is used in image processing?

12. (a) What is the uniqueness of a magic wand selection tool?

Or

(b) Write a note on Adobe Photoshop tools.

13. (a) Write about monochrome.

Or

(b) Explain the use of perspective warp in photoshop.

14. (a) How to combine objects in Illustrator?

Or

(b) How to use dynamic symbols in Illustrator?

15. (a) What are the differences between a status bar and control panel?

Or

(b) What does UI stand for in games?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the following (i) raster graphics (ii) vector graphics (iii) typography (iv) etching and (v) photography.

Or

(b) Write about the importance of color in graphic design.

17. (a) How to use brush tools in Adobe photoshop? Explain.

Or

(b) Write an essay on correcting tone and color with levels in photoshop.

18. (a) Explain the Illustrator workspace which allows the user to produce an artwork.

Or

(b) Write about proportions and exaggeration of body parts in character design.

———————

C–6161

Sub. Code
83432

B.Sc. DEGREE EXAMINATION, APRIL 2022

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. Write a short note on Namespace.
2. Define Mesh.
3. What is Animation?
4. How Path finding works?
5. What are all the checks for memory leak?
6. Define Lighting.
7. Give the examples for Sound and Music.
8. Mention about Occlusion Culling.
9. What is a particle effect?
10. List out any four properties of Camera.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Brief a note on the components of Polygonal meshes and their models.

Or

(b) Describe Screen dimensions with examples.

12. (a) Explain in detail about Event Handling.

Or

(b) Elaborate the process to convert the positions of screen to worldwide positions.

13. (a) Discuss the ways to develop Terrain design in Games.

Or

(b) Explore on the Colliders and their classifications.

14. (a) Summarize on Memory Leaks and its optimization.

Or

(b) Summarize the properties of Camera and cover the relationship on Cinematics.

15. (a) How to build platforms? Analyze the ways to implement Code clean up.

Or

(b) Brief a note on Texture rendering.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the steps to import 2D and 3D model into Games.

Or

(b) Elaborate Game Design and Development.

17. (a) Detail about the introduction to 3D Game Development.

Or

(b) Write in detail about the concepts of 2D and 3D Game World.

18. (a) Discuss and criticize the concepts, history of In-Out ray and, Ray casting.

Or

(b) How are game cinematics made? And explain the challenges faced by it.

———————

C–6162	Sub. Code
	83433

B.Sc. DEGREE EXAMINATION, APRIL 2022

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 duplicate surface curves.
2. Compare Offset and Rebuild curves.
3. Tell about Insert Isoparms.
4. Write a note on Intersect in digital modeling.
5. Summarize about the Image base Lighting.
6. Give key notes on Topology.
7. Discuss shortly on modeling weapon.
8. Tell about the move seam.
9. Write about the term “Genre” in a game.
10. What do you mean by Sculpt polygon tool?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the user interface working in 3D.

Or

(b) Detail on the Perspective and Orthographic windows.

12. (a) Brief about the Birail 1,2 and 3.

Or

(b) Explain about the Duplicate NURBs patch.

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

Or

(b) Detail on Retopology and Anatomy in game design.

14. (a) Write about the Basic prop modelling.

Or

(b) Discuss on the Rebuild curve and Extend curve in basic digital games modeling.

15. (a) Briefly write about the new features of Polygon Tools.

Or

(b) Describe about the characteristics of design settings for video.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the various maps used in digital game modeling.

Or

(b) Discuss the salient features of Add point tools and detail their functions.

17. (a) Elaborate the features and different steps involved in Weapon design.

Or

(b) Detail on various add-ons and tools available in NURBS primitives.

18. (a) Explain in detail about the various curve and edit tools used in game modeling designs.

Or

(b) Brief the requirements in set design for various features like Gaming modes, Video, requirements and environment modeling.

———————

C–6163	Sub. Code
	83434

B.Sc. DEGREE EXAMINATION, APRIL 2022

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. Define HTML 5.
2. Give a short note on Semantic tags.
3. Mention the properties of Canvas.
4. List out any four uses of SVG.
5. Define Animations.
6. Tell about the keynote on JavaScript.
7. What is Sprite Sheet?
8. What is Scrolling effect?
9. Define JSON parsing.
10. Write down three points to develop interaction in web pages.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is SVG and Canvas? State their differences, properties and types.

Or

(b) Discuss the steps involved in HTML 4 with examples.

12. (a) Explain in detail about Arrays standard and their types.

Or

(b) Give a short note on validation.

13. (a) Describe in your own words, the 12 popular ways to build interaction in webpages.

Or

(b) Write in detail about Scrolling effect and its classification.

14. (a) How do you Animate on Canvas? and explain the Basic Animation steps.

Or

(b) How to make a game using JavaScript?

15. (a) Briefly discuss request and response in a gaming platform.

Or

(b) Detail on applications of Asynchronous webpage.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about Webpage constructions with different combo of contents.

Or

(b) Briefly explain on Canvas Game development.

17. (a) Write in detail on File Handling Import and Export data.

Or

(b) Outline the steps involved in Maintenance of Score Information.

18. (a) Discuss the history of SVG Canvas.

Or

(b) Write down the code and develop a game with examples and output result.

———————

C–6164	Sub. Code
	83442

B.Sc. DEGREE EXAMINATION, APRIL 2022

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. Give a short note on creating textures.
2. Write a note on translucency in textures.
3. Infer about the material nodes.
4. Write a note on specular.
5. Write a keynote on “maya light attributes”.
6. Tell about the term “brush instance”.
7. Discuss shortly on body mesh.
8. Write a keynote on primitive rig.
9. What do you mean by character topology?
10. Infer about the concept “material allocation”.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss on the graphic file formats.

Or

(b) Describe about surface luminance in textures.

12. (a) Detail on texture, normal and ambient maps.

Or

(b) Outline the various prospects in reflection and environment of games.

13. (a) Give a short note on smart materials.

Or

(b) Write in detail about shadows generation and troubleshooting.

14. (a) Summarize on the concept "skinning for each model".

Or

(b) Discuss in detail about the "baking detail to low-poly".

15. (a) Briefly discuss on handling hair and face mesh in games.

Or

(b) Give a short note on modeling basics.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about various types of compression in gaming designs.

Or

(b) Briefly explain Texturing elements and objects.

17. (a) Explain in detail on the smart materials and various instances in it.

Or

(b) Outline with necessary illustrations, the animation cycles for engines.

18. (a) Describe the process in "building a profile of the character shape".

Or

(b) Elaborate in detail about rendering and their types in the game design.

———————

C–6165	Sub. Code
	83443/82643

B.Sc. DEGREE EXAMINATION, APRIL 2022

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. Define Arrays.
2. Tell about the data abstraction.
3. Summarize on the types of threading.
4. Write a note on vectors.
5. What do you mean by IDE interface?
6. List the steps carried out in service-UI.
7. Pen down the steps followed in creating a project.
8. Tell about the sprite animation.
9. Write about the handling of sensors.
10. Give key points on programming gameplay.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss on the process of working with arrays.

Or

(b) Detail about the constructors and primitives.

12. (a) Discuss about the multithreading using runnable interface.

Or

(b) Outline the various prospects in overloading and overriding.

13. (a) Give a short note on roles of mobile platform.

Or

(b) Write in detail the tools used in build system.

14. (a) Summarize on the input processor.

Or

(b) Discuss about the class and life cycle of games.

15. (a) Briefly discuss the integrating physics engine.

Or

(b) Write short notes on event handling.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about the classes of inheritance and importance of arrays.

Or

(b) Briefly explain about the dynamic binding and tokens of java.

17. (a) Explain in detail about the understanding of IDE interface and benefits of mobile platforms.

Or

(b) Outline about the implementation and view ports in game development.

18. (a) Describe the working with physical bodies in game design and development.

Or

(b) Write on your own words about the gaming projects importing into IDE, importing assets and sprite batch.

———————

C–6166

Sub. Code
83451

B.Sc. DEGREE EXAMINATION, APRIL 2022

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 Terrain.

2. What is texturing in game programming?

3. Does post processing cause lag in game?

4. Define Prefabs.

5. What is the difference between packaging and exporting?

6. Explain Kill stealing.

7. What is the use of gravity boost ability?

8. Create a five level selection map for a game.

9. What is Cascade VFX?

10. Explain the technique of gluing the character to the moving platform.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are GUI and UI?

Or

(b) Explain static mesh.

12. (a) What are the benefits and drawbacks of skeletal animation?

Or

(b) Differentiate video game Music and Sounds.

13. (a) What are the uses of floating action buttons?

Or

(b) Why do games have loading screens?

14. (a) What is called cool down in Need for Speed video game?

Or

(b) Explain the process of regaining fuel by pickup items.

15. (a) How to implement save/load functionality for games with levels?

Or

(b) When and where to use animated popup messages in games?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Differentiate 2D Primitive shapes and 3D shapes.

Or

(b) Why Linear Algebra, C++, Math Engine, Open GL, Design Patterns, Rendering Engine, Newton's Laws of Motions are important to build a game engine? Explain.

17. (a) Write an essay on Mixing and mastering game audio for mobile devices.

Or

(b) Explain the following

(i) UMG UI Design

(ii) Widget Blueprints

(iii) Anchors

(iv) Property Binding and

(v) DPI Scaling.

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

Or

(b) Write an essay on level blueprints and blueprint classes.

———————

C–6167	Sub. Code
	83454

B.Sc. DEGREE EXAMINATION, APRIL 2022

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 GPS.
2. What is known as Knowledge Engineering?
3. What do you mean by Pattern Movement?
4. Define Neural network.
5. What is meant by fuzzy state machine?
6. What is Classical flocking?
7. What is meant by Boolean nodes
8. Define Procedural Knowledge.
9. Give two examples of Heuristics.
10. What is meta knowledge in Expert System?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What area the applications of AI?

Or

(b) Write a note on Heuristics.

12. (a) Give the advantages and disadvantages of Game AI over AI.

Or

(b) How do you create strategically AI in the games?

13. (a) Write a note on the simple rules of Flocking behavior.

Or

(b) What are the advantages and disadvantages of fuzzy logic system?

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

Or

(b) What are the two methods of reasoning when using inference rules?

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

Or

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

Part C (3 × 10 = 30)

Answer **all** questions.

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 types of artificial neural networks.

Or

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

18. (a) Write in detail note on the knowledge acquisition techniques.

Or

(b) Write in detail about the characteristics of expert system.

———————

C–6168

Sub. Code
83455A

B.Sc. DEGREE EXAMINATION, APRIL 2022

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 VR?

2. Define Pitch.

3. What is a quaternion?

4. What is meant by homogenous transformation?

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

6. Abbreviate DOFs.

7. Define image acquisition.

8. What is meant by EPnP?

9. Give an example of actuator.

10. What is a device telemetry?

Part B (5 × 5 = 25)

Answer **all** questions.

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

Or

(b) Give a note on the basic principles 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 Tracking positions and orientations.

14. (a) Differentiate between VR and AR.

Or

(b) What is a feature selection and feature extraction?

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

Or

(b) What are the different types of Actuators?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the hardwares and softwares in VR system.

Or

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

17. (a) Write in detail about axis angle rotation in 3D.

Or

(b) Explain in detail about the various kinds of transformation.

18. (a) Explain the various modern day applications of IoT.

Or

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

———————

C–5664

Sub. Code
16/17/23/25/ 26/27/29

Common for All U.G. B.Sc./B.B.A. DEGREE EXAMINATION, APRIL 2022

First/Second Semester

ENVIRONMENTAL STUDIES

(2019/2020 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. ZSI.

2. WII.

3. What is renewable energy?

4. Food web.

5. Pyramid of numbers in aquatic ecosystem.

6. Red data book.

7. List out any five Endemic species of India.

8. List out marine pollutants.

9. *Ex Situ* Conservation.

10. Enlist Option Values of Biodiversity.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write notes on definition, scope and importance of environmental studies.

Or

(b) Write notes on soil erosion and desertification.

12. (a) Write notes on energy flow in the ecosystem.

Or

(b) Write notes on threads to biodiversity.

13. (a) Write notes on Biodiversity at Global, National and Local levels.

Or

(b) Write notes on various strategies of conservation of Biodiversity.

14. (a) Write notes on ecological pyramids.

Or

(b) Write notes on air pollution.

15. (a) Write notes on noise pollution.

Or

(b) Write notes on effects and control measures of nuclear hazards.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on the multidisciplinary nature of Environmental Studies.

Or

(b) Write an essay on the following resources with special emphasis to how they are overexploited/utilized which in turn damage the environment, (i) Forest Resources and (ii) Food Resources.

17. (a) Write an essay on "India is a mega-diversity nation".

Or

(b) Write an essay on Biodiversity and their values.

18. (a) Write an essay on causes, effects and control measures of (i) Marine Pollution and (ii) Water Pollution.

Or

(b) Write an essay on concept, structure and function of ecosystem.

———————