C–7613

Sub. Code
82813

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Game Arts & Design

FUNDAMENTALS OF GAME ART

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of these best describes the process of defining surface limits in a drawing?

   (a) Perspective

   (b) Contour drawing

   (c) Geometric structure

   (d) Shading

2. In the context of free strokes, what is a "Diverging line"?

   (a) A line that curves inward

   (b) A line that forms a perfect square

   (c) A line that spreads out from a common point

   (d) A line that represents light intensity

3. In a one-point perspective, how many vanishing points are typically used?

(a) One (b) Two

(c) Three (d) Four

4. What term refers to the line that represents the viewer's eye level in perspective drawing?

(a) Picture plane

(b) Horizon line

(c) Station point

(d) Vanishing point

5. Which of the following is a key principle of figure drawing that ensures stability and realism?

(a) Line of action

(b) Foreshortening

(c) Gesture

(d) Balance

6. What is the term for drawing the human figure life to capture its natural form and movement?

(a) Stylization (b) Quick sketching

(c) Proportion (d) Contour drawing

7. Which term refers to the lightness or darkness of a color?

(a) Saturation (b) Hue

(c) Value (d) Intensity

8. In color psychology, which color is most commonly associated with calmness and tranquility?

(a) Blue (b) Red

(c) Yellow (d) Green

9. Which style of Western art is characterized by an emphasis on light and shadow and capturing fleeting moments of everyday life?

(a) Renaissance (b) Impressionism

(c) Gothic (d) Surrealism

10. Which art form is associated with Japan and involves intricate, hand-carved prints, often depicting nature or daily life?

(a) Ukiyo-e (b) Byobu

(c) Calligraphy (d) Mandala

Part B

$(5 \times 5 = 25)$

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

11. (a) Brief about the role of diverging lines in creating perspective and depth within a drawing.

Or

(b) Explain in detail about the relationship between line quality and light in drawing.

12. (a) Discuss in detail about the techniques used in aerial perspective to create depth.

Or

(b) Pen down in detail about the significance of the horizon line in perspective drawing.

13. (a) Discuss in detail about the concept of foreshortening in figure drawing.

Or

(b) Briefly explain about the basic principles of contour drawing.

14. (a) Explain about the process of creating a color wheel.

Or

(b) Explain in detail about value and saturation influence the impact of a color in an artwork.

15. (a) Discuss in detail about the role of the Mughal miniature painting style in Indian art.

Or

(b) Explain in detail about the key features of Western art during the Impressionist movement.

Part C (5 × 8 = 40)

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

16. (a) Explain in detail about the role of diverging lines in creating perspective is essential for depth.

Or

(b) Discuss how an artist can use geometric shapes and surface definitions to break down complex forms.

17. (a) Discuss how the horizon line affects the appearance of objects in a drawing.

Or

(b) Discuss in detail about how can artists use aerial perspective in landscape paintings or urban scenes to enhance realism?

18. (a) Explain in detail about the line of action can help establish a natural, balanced posture in the human figure.

Or

(b) Discuss the process and importance of contour drawing in figure drawing.

19. (a) Explain in detail about the relationship between hue, value, and saturation plays a crucial role in the perception of color.

Or

(b) Pen down in detail about the importance of color contrast in artwork.

20. (a) Discuss how the techniques of perspective, proportion, and humanism revolutionized art during this time.

Or

(b) Explain in detail about the characteristics of these movements and how they reflected the socio-political climate of the early 20th century.

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C–7614

Sub. Code
82815/82915

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

INTRODUCTION TO VISUAL COMMUNICATION

(Common for B.Sc. (GA & D)/ B.Sc. (Visual Effects)

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is an essential function of visual communication?

   (a) Enhancing Retention

   (b) Reducing clarity

   (c) Increasing noise in the message

   (d) Complicating comprehension

2. What is the main barrier to effective communication in visual media?

   (a) Lack of color theory knowledge

   (b) Misinterpretation of non-verbal cues

   (c) Overuse of visual symbols

   (d) Too many words on screen

3. The SMCR model of communication includes which of the following components?

(a) Sender, Message, Channel, Receiver

(b) Sign, Message, Context, Receiver

(c) Source, Media, Communication, Receiver

(d) Subject, Message, Communication, Receiver

4. According to Schramm's Circular Model of Communication, the communication process is

(a) One-way

(b) Linear

(c) Continuous and interactive

(d) Controlled by the sender

5. What does the term "denotation" refer to in semiotics?

(a) The emotional association of a symbol

(b) The literal or primary meaning of a symbol

(c) The social context of a sign

(d) The secondary, inferred meaning of a symbol

6. Which aspect of a sign refers to its placement and sequence in a message?

(a) Paradigmatic

(b) Syntagmatic

(c) Contextual

(d) Symbolic

7. Public opinion is formed primarily through

(a) Personal experiences only

(b) Government mandates

(c) Peer pressure

(d) Media and communication interactions

8. Which communication theory focuses on how mass media influences the public's views and opinions?

(a) Spiral of Silence Theory

(b) Agenda-Selling Theory

(c) Uses and Gratifications Theory

(d) Social Learning Theory

9. Which model of mass media suggests that media messages have a direct, powerful effect on the audience?

(a) Uses and Gratifications Model

(b) Cultivation Theory

(c) Hypodermic Needle Model

(d) Two-step Flow Theory

10. The concept of "media democracy" suggests that

(a) Media should be controlled by the government

(b) The media serves as a channel for democratic participation

(c) The media promotes corporate interests

(d) Only a small group of elites should control the media

Part B (5 × 5 = 25)

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

11. (a) Brief about how visual communication enhances comprehension and retention.

Or

(b) Explain in detail about the role of non-verbal communication in visual media.

12. (a) Discuss in detail about the SMCR communication model.

Or

(b) Briefly explain about Lasswell's communication model.

13. (a) Discuss in detail about the difference between denotation and connotation.

Or

(b) Briefly explain about the paradigmatic and syntagmatic aspects of signs in semiotics.

14. (a) Explain about the relationship between communication and public opinion.

Or

(b) Explain in detail about the concept of strategic communication.

15. (a) Discuss in detail about the effects of mass media on public opinion.

Or

(b) Explain in detail about the role of mass media in democracy.

Part C (5 × 8 = 40)

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

16. (a) Explain in detail about the importance of clarity and comprehension in visual communication.

Or

(b) Discuss how visual communication can evoke emotions and engage the audience.

17. (a) Elaborate on the SMCR communication model and its application in visual communication.

Or

(b) Pen down in detail about Lasswell's communication model in the context of mass media.

18. (a) Explain in detail about the relationship between signs, symbols, and their meanings in visual culture, using examples from advertising and media.

Or

(b) Compare and contrast denotation and connotation in the context of visual communication.

19. (a) Explain in detail about the concept of public opinion and how communication shapes it.

Or

(b) Pen down in detail about the impact of strategic communication in shaping public opinion.

20. (a) Discuss in detail about the Hypodermic Needle Model and its relevance in the context of mass media today.

Or

(b) Explain in detail about the relationship between mass media and democracy.

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C–7615

Sub. Code
82823

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Games Arts & Design

DESIGN STUDY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the primary purpose of design in human life?
   (a) Decoration
   (b) Communication and problem- solving
   (c) Entertainment
   (d) Luxury

2. Which of the following helps in identifying the target audience?
   (a) Experimental trials
   (b) Consumer demographics and psychographics
   (c) Material testing
   (d) Studio space layout

3. Which of the following is an element of design?
   (a) Emphasis (b) Balance
   (c) Texture (d) Rhythm

4. Which of the following is *not* an element of design?

(a) Shape (b) Rhythm

(c) Line (d) Texture

5. Which of the following are primary colors?

(a) Red, Green, Blue

(b) Yellow, Green, Purple

(c) Red, Yellow, Blue

(d) Orange, Purple, Red

6. What does color psychology deal with?

(a) Mixing paints

(b) Color matching

(c) Emotional impact of colors

(d) Pigment selection

7. Which part of typography refers to the vertical space between lines?

(a) Kerning (b) Leading

(c) Tracking (d) Padding

8. Which term refers to a group of related typefaces?

(a) Font weight (b) Type family

(c) Glyph set (d) Font style

9. What is a grid in design?

(a) A font style

(b) A coloring technique

(c) A structured framework for layout

(d) A design element

10. Grid consistency ensures :

(a) Randomness

(b) Visual confusion

(c) Alignment and order

(d) Color vibrancy

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

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

11. (a) List and explain any three characteristics of a designer's mindset.

Or

(b) Differentiate between creative and stereotypical solutions.

12. (a) List and explain any four elements of design.

Or

(b) Define creativity and explain its importance in design.

13. (a) Explain the different between warm and cool colors with examples.

Or

(b) What is digital color theory and its application in design?

14. (a) Explain the anatomy of a typeface with examples.

Or

(b) Describe how spacing and alignment affect typography layout.

15. (a) Define grid anatomy and its parts.

Or

(b) What are the stages of creating an effective layout?

Part C (5 × 8 = 40)

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

16. (a) Explain the experiential approach in design challenges and how it enhances outcomes.

Or

(b) Evaluate the role of creativity in contrast to stereotype in generating impactful design solutions.

17. (a) Define typeface anatomy and mention key parts.

Or

(b) Discuss methods to develop creativity in design.

18. (a) Explain the use of color wheel in design.

Or

(b) Describe color temperature and its influence in design.

19. (a) Discuss the history and evolution of typography.

Or

(b) Explain how to choose appropriate fonts considering spacing, alignment and type family.

20. (a) Explain the role of grid systems and templates in design.

Or

(b) Describe the process of transforming ideas into page layouts using grids.

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C–7616

Sub. Code
82825

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Game Arts and Design

CRITICAL STUDIES FOR GAMES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What was the main display technology used in early vector games?

   (a) LCD screens

   (b) Vector monitors

   (c) Pixel shading

   (d) Raster graphics

2. What arcade game is widely considered one of the first commercially successful video games?

   (a) Pong (b) Doom

   (c) Halo (d) Minecraft

3. What was one of the earliest and most successful handheld video game systems?

(a) Xbox

(b) Sega Dreamcast

(c) PlayStation 2

(d) Game Boy

4. Lara Croft is the main character of which iconic video game series?

(a) Final Fantasy (b) Tomb Raider

(c) Halo (d) The Sims

5. Which of the following is a video game genre?

(a) Fiction (b) Racing

(c) Non-fiction (d) Puzzle books

6. What type of game is Super Mario Bros?

(a) Sports (b) Simulation

(c) Platformer (d) Strategy

7. What is one positive impact games can have on players?

(a) Increased aggression

(b) Improved problem-solving skills

(c) Lower academic performance

(d) Lack of sleep

8. What does "end-user experience" refer to in game design?

(a) How fast a game sells

(b) Experience of the game publisher

(c) Ending of the game's story

(d) Overall experience of the player when using the game

9. Which of the following is an example of a type of IP?

(a) Trademark, copyright and patent

(b) Music only

(c) Television

(d) Console hardware

10. What are "abilities" in the context of market targeting?

(a) Superpowers in games

(b) Bonus levels

(c) Types of consoles

(d) Developer skills and team strengths

Part B

$(5 \times 5 = 25)$

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

11. (a) Describe the impact of vector graphics on early video game development.

Or

(b) Explain the role of Atari in the early video game industry.

12. (a) What defines a first-person shooter (FPS) game? Name one influential FPS from the 1990s or 2000s.

Or

(b) How did independent (India) video games differ from mainstream titles? Provide one example?

13. (a) Describe the gameplay and significance of *Super Mario Bros* in video game history.

Or

(b) What is the moral debate around violence in video games like *Grand Theft Auto*?

14. (a) What is a "hidden agenda" in video games? Provide one example or possible effect.

Or

(b) Describe one key challenge and one advantage in the business of game publishing.

15. (a) 'What does "honour the player" mean, and why is it important in game design?

Or

(b) List and explain two types of intellectual property used in the gaming industry.

Part C (5 × 8 = 40)

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

16. (a) Compare early video game systems like the Atari 2600 with later CD-ROM based consoles. What technological advancements were made?

Or

(b) 'Discuss the different modes of exhibition for video games and how they have evolved over time (e.g., arcades, home systems, museums, digital platforms).

17. (a) Explain the impact of the Sony PlayStation on gaming technology and marketing. How did it differ from its competitors at the time?

Or

(b) Analyse the representation of gender in video games using Lara Croft as a case study. What criticisms and praises have the character received?

18. (a) Compare and contrast simulation games like *SimCity*, *Flight Simulator* and *The Sims* in terms of gameplay and educational value.

Or

(b) Evaluate the role of video game genres in shaping player experience. Discuss at least three genres with examples.

19. (a) Evaluate how the tabletop game industry contributes to social interaction and skill development. Compare it briefly with digital games.

Or

(b) Analyse the responsibilities of a game designer in terms of ethics, player well-being, and fair gameplay.

20. (a) Analyse how understanding both the "core of the game" and the "core of the IP" helps in creating a successful sequel.

Or

(b) Explain the process and importance of market research when designing a game for a mass market audience.

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C–7620

Sub. Code
82843

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Game Arts & Design

PROCEDURAL MODELLING FOR GAMES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What does proceduralism primarily rely on in 3D modeling?

   (a) Hand-sculpted geometry

   (b) Photogrammetry

   (c) Algorithms and rule-based generation

   (d) Pre-made assets

2. Which of the following game engine integrations is supported by Houdini Engine?

   (a) CryEngine only

   (b) Unity and Unreal Engine

   (c) Blender

   (d) Source Engine

3. Which of the following panes is primarily used to view and interact with the 3D scene in Houdini?

(a) Scene View

(b) Parameter Pane

(c) Network Editor

(d) Geometry Spreadsheet

4. What is the default geometry node used to create basic 3D shapes like spheres and boxes in Houdini?

(a) Transform Node (b) Output Node

(c) SOP Node (d) Geometry Node

5. What does the 'length' parameter control in the bridge generation tool?

(a) distance the bridge spans from one side to the other

(b) number of pillars supporting the bridge

(c) strength of the bridge's foundation

(d) type of materials used for the bridge

6. What is the role of the 'pillars' parameter in the bridge generation tool?

(a) To determine the number of lanes in the bridge

(b) To affect the aesthetic design of the bridge

(c) To define the number and spacing of supports under the bridge

(d) To decide the type of materials used for the bridge

7. When exporting a Digital Asset to Unity or Unreal Engine, what file format is commonly used?

(a) .fbx (b) .hda

(c) .obj (d) .jpg

8. Which parameter type in Houdini is most used for creating a simple "on/off" switch in a digital Asset's UI?

(a) Button (b) Float

(c) String (d) Toggle

9. Which plugin is required to import Houdini Digital Assets into Unreal Engine?

(a) Houdini Engine for Unity

(b) Houdini Engine for Unreal

(c) Houdini FX

(d) Unreal Asset Bridge

10. What is the main benefit of using procedural assets in a game level?

(a) Dynamic generation of content with over flexibility

(b) High control over lighting

(c) Static and consistent assets

(d) Reduced level size

Part B

$(5 \times 5 = 25)$

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

11. (a) Define proceduralism in 3D modeling. Provide one example of its application.

Or

(b) Mention two industries where Houdini is commonly used and explain why.

12. (a) List and briefly describe any two key panes in the Houdini interface.

Or

(b) What is the main difference between saving a .hip and a .hiplc file in Houdini?

13. (a) What is the role of the 'width' parameter in a procedural bridge-building tool?

Or

(b) What considerations should be made when adjusting the 'pillars' parameters for a bridge?

14. (a) Explain the process of converting a tool like the Bridge Tool in Houdini into a Digital Asset. What are the key steps involved?

Or

(b) What is the significance of the Houdini Engine when exporting a Digital Asset for use in game engines?

15. (a) Explain how Houdini Digital Assets (HDAs) are imported into Unity and Unreal Engine.

Or

(b) List and briefly explain two ways procedural assets can be optimized for real-time performance in game engines.

Part C (5 × 8 = 40)

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

16. (a) Discuss the role of SideFX Houdini in procedural workflows and how it supports game development.

Or

(b) Analyze the benefits of proceduralism in modern game design. Provide examples to support your answer.

17. (a) Compare parameter-driven modeling in Houdini with traditional polygon modeling techniques. Provide advantages and limitations of each.

Or

(b) Discuss best practices for saving and organizing Houdini projects for long-term production use.

18. (a) Describe the process of procedural bridge generation and the impact of adjusting the width, length, height and pillars on the final design.

Or

(b) Explain the advantages and limitations of using a procedural generation system for bridge design in comparison to manually designing a bridge.

19. (a) Describe in detail the steps involved in exporting a Houdini Digital Asset for use in a game engine (e.g., Unity or Unreal Engine).

Or

(b) Explain the advantages and disadvantages of using Houdini Digital Assets (HDA_5) in game development.

20. (a) Describe the full workflow of importing Houdini Digital Assets into a game engine (Unity), including setup, materials, and deployment.

Or

(b) How are procedural assets implemented in game levels, and what are their advantages and limitations?

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C–7621

Sub. Code
82844

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Game Arts & Design

LEVEL DESIGN FOR GAME

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which perspective is ideal for 2D platform level design?
   (a) Aerial view (b) Orthographic
   (c) Isometric (d) First-person

2. Level ideation usually begins with :
   (a) Texture mapping
   (b) Lighting setup
   (c) Top-view planning
   (d) Script writing

3. What is pixel art commonly used for in 2D games?
   (a) Voiceovers (b) Background scores
   (c) Sprite design (d) Collision detection

4. Photoshop is primarily used in 2D design for :
   (a) Sound mixing (b) Sprites and textures
   (c) Physics coding (d) Shader development

5. What is the purpose of blocking in level design?

(a) Texturing

(b) Animating characters

(c) Creating physical layout

(d) Composing music

6. Hammer or Radiant tools are used for :

(a) Audio synthesis (b) Level modeling

(c) Character AI (d) UI design

7. In 3D single player design, "static meshes" refer to :

(a) Moveable objects

(b) Animated NPCs

(c) Stationary environment assets

(d) Dynamic physics systems

8. Triggers in 3D levels are used to :

(a) Create textures

(b) Apply shaders

(c) Initiate actions/events

(d) Modify code

9. Height maps are primarily used in sandbox terrain to :

(a) Add water bodies

(b) Create weather patterns

(c) Generate elevation data

(d) Animate objects

10. Vegetation and atmosphere in a sandbox level affect:

(a) Sound volume

(b) Visual aesthetics

(c) Code performance

(d) Frame buffering

Part B (5 × 5 = 25)

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

11. (a) Explain the role of perspective in level design.

Or

(b) What is the function of a top-view planning grid in ideation?

12. (a) Briefly describe sprite animation and its importance in 2D games.

Or

(b) What are the differences between 2D and 3D level design?

13. (a) What is the significance of playtesting in multiplayer level design?

Or

(b) How is the Hammer tool used in blocking and layout?

14. (a) Define "static meshes" and explain their use in single player level design.

Or

(b) Describe the process of setting up lighting in a 3D level.

15. (a) What is the role of terrain textures in a sandbox level?

Or

(b) Describe the use of height maps in designing terrains.

Part C

$(5 \times 8 = 40)$

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

16. (a) Discuss how perspective drawing enhances player navigation in level design.

Or

(b) Write an essay on isometric art in 2D platform game levels.

17. (a) Explain the process of creating pixel art in Photoshop for 2D games.

Or

(b) Analyze the principles of 2D level design with examples.

18. (a) Describe how multiplayer levels are conceptualized and tested.

Or

(b) Discuss the steps from blocking to detailing in a 2D level.

19. (a) Explain the integration of triggers and lights in a 3D level design.

Or

(b) Discuss the brush concept and room building in 3D Level design.

20. (a) Evaluate the use of scaling and texture layering in sandbox environments.

Or

(b) Explain how atmosphere and flora influence the gameplay experience in sandbox levels.

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C–7622

Sub. Code
82846

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Game Arts & Design

3D CHARACTER DESIGN FOR GAME

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the purpose of topology in character modeling?
   (a) Texture blending
   (b) Rendering
   (c) Animation deformation
   (d) Audio syncing

2. Which element defines character proportion?
   (a) Bone rig (b) Layout sheet
   (c) Viewport (d) Map baking

3. What is unwrapping in 3D texturing?
   (a) Removing layers
   (b) Flattening a 3D model to 2D
   (c) Painting details
   (d) Importing models

4. Specular maps are used to represent :

(a) Texture scaling (b) Surface shine

(c) Object weight (d) Topology loops

5. Dynamesh is a feature used in :

(a) Photoshop (b) ZBrush

(c) Maya (d) Substance

6. Retopology helps in :

(a) Adding noise

(b) UV distortion

(c) Optimizing mesh for animation

(d) Background rendering

7. What is the primary benefit of PBR texturing?

(a) Stylized look

(b) Accurate lighting response

(c) Low file size

(d) Simplified rendering

8. Substance Painter is mainly used for :

(a) Sculpting (b) Painting textures

(c) Rigging (d) Rendering animation

9. Which tool is used for creating basic skeletons in rigging?

(a) Curve tool (b) Paint weights

(c) Joint tool (d) Subdivide

10. Animation cycles are important for :

(a) UV unwrapping

(b) Shader creation

(c) Realistic character behavior

(d) File compression

Part B (5 × 5 = 25)

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

11. (a) Define the basic layout of a 3D character and explain character body mesh creation.

Or

(b) What is character topology? Explain its importance in modeling.

12. (a) Explain the process of creating normal and diffuse maps.

Or

(b) What are alpha textures and how are they used in detailing?

13. (a) Describe the functions of Dynamesh and polygroups in 3D sculpting.

Or

(b) What is Retopology? Why is it important for high poly models?

14. (a) What are the key steps in PBR texturing using Painter?

Or

(b) Explain the concept of map baking in high-to-low poly workflow.

15. (a) Differentiate between basic and advanced rigging.

Or

(b) Describe the process of importing character animation into a game engine.

Part C

(5 × 8 = 40)

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

16. (a) Discuss the entire workflow of creating a 3D character mesh from scratch.

Or

(b) Explain the process and challenges of character face and hair modeling.

17. (a) Write an essay on various texturing maps used in character design.

Or

(b) Describe the process of unwrapping a character and assigning material maps.

18. (a) Explain in detail the sculpting workflow in ZBrush for high poly character design.

Or

(b) Discuss the role of advanced brushes and Zmodeler tools in character detailing.

19. (a) Analyze the benefits of PBR workflow in game development.

Or

(b) Explain how different texture maps (AO, Normal, Roughness) influence realism.

20. (a) Explain rigging tools used in 3D animation and how they affect final output.

Or

(b) Discuss animation cycles and how they are prepared for game engines.

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C–7630

Sub. Code
82861

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Game Arts and Design

GAME RIGGING TECHNIQUES

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is the main purpose of rigging in game design?

   (a) Texture blending

   (b) Creating skeletal motion

   (c) Sound mixing

   (d) Modeling

2. Which type of rigging is commonly used for robots and vehicles?

   (a) Character rigging

   (b) Organic rigging

   (c) Mechanical rigging

   (d) Motion rigging

3. In a mechanical rig, what does the joint hierarchy define?

(a) Texture quality

(b) Sound Levels

(c) Parent-child relationships

(d) Color schemes

4. What is a controller used for in rigging?

(a) Game rendering

(b) Lighting setup

(c) Animation control

(d) Sound control

5. Pistons are typically rigged using which type of movement?

(a) Bending (b) Rotation

(c) Translation (d) Scaling

6. What is the function of an IK rig?

(a) Inverts colors

(b) Determines joint rotation based on end effector

(c) Applies sound

(d) Controls lighting

7. What does LOD stand for in rigging optimization?

(a) Level of Display

(b) Level of Design

(c) Level of Detail

(d) Length of Display

8. Reducing the number of joints in a rig helps improve:

(a) Lighting (b) Physics

(c) Performance (d) Resolution

9. Which of the following is a commonly supported file format for exporting rigs?

(a) .docx (b) .fbx

(c) .jpg (d) .mp3

10. Collaboration between riggers and game developers ensures

(a) High file size

(b) Software errors

(c) Compatibility and performance

(d) Shader mismatch

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

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

11. (a) Define mechanical rigging. How is it different from character rigging.

Or

(b) Discuss the key performance constraints for real-time rigging in game engines.

12. (a) Explain the role of joint hierarchy in rigging a robotic arm.

Or

(b) Write a short note on common rigging tools used in the industry.

13. (a) Describe the steps to create an IK rig for a rotating wheel.

Or

(b) How do pivot points affect animation paths in mechanical rigs?

14. (a) What is the importance of reducing rig complexity for games?

Or

(b) Briefly explain how LOD helps in mechanical rig performance.

15. (a) Discuss the process of exporting rigs to Unreal Engine.

Or

(b) List and explain common issues faced during rig export and their solutions.

Part C

(5 × 8 = 40)

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

16. (a) Elaborate on the role of rigging in a real-time game design pipeline.

Or

(b) Trace the evolution of rigging techniques in modern game design.

17. (a) Explain how constraints and controllers contribute to effective rigging.

Or

(b) Analyze the structure of a mechanical rig hierarchy using a machine example.

18. (a) Describe the complete workflow for animating a piston-driven machine.

Or

(b) Write a detailed note on setting up keyframe animations for mechanical parts.

19. (a) Explain how to optimize a rig for a mobile game with limited processing power.

Or

(b) Discuss LODs and how they are implemented in mechanical rig design.

20. (a) Write an essay on collaboration between riggers, developers, and artists in game production.

Or

(b) Discuss testing and iteration strategies to refine rig performance after integration.

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C–7631	Sub. Code 82862

B.Sc. DEGREE EXAMINATION, APRIL 2026.

Sixth Semester

Game Arts and Design

REAL TIME GAME FX

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What is a major advantage of real-time effects in modern games?

   (a) Reduced performance cost

   (b) Enhanced interactivity

   (c) Slower rendering

   (d) Limited control

2. Which engine is widely used for real-time game FX today?

   (a) Unity (b) CryEngine

   (c) Frostbite (d) Unreal Engine

3. Which panel in Unreal Engine allows managing content like textures and meshes?

   (a) Material Editor (b) Blueprint Panel

   (c) Content Browser (d) Scene Graph

4. What is the first step in starting a new project in Unreal Engine?
   (a) Create animation
   (b) Bake lighting
   (c) Choose project template
   (d) Design HUD

5. What physics property helps simulate gravity in games?
   (a) Reflection (b) Mass
   (c) Refraction (d) Luminance

6. Rigid body simulation is best suited for
   (a) Liquids (b) Fire
   (c) Solid objects (d) Clouds

7. What is a particle emitter?
   (a) A sound source
   (b) A texture map
   (c) A tool to create particles
   (d) A light renderer

8. Which module in Unreal controls particle size over time?
   (a) Velocity module (b) Size by Life
   (c) Initial Location (d) Collision

9. What is crucial while integrating FX into game scenes?
   (a) Using high-res textures only
   (b) Ignoring frame rate
   (c) Optimization
   (d) Manual coding only

10. Collaborative development involves
   (a) Working solo
   (b) Ignoring version control
   (c) Team-based workflow
   (d) Random testing

Part B (5 × 5 = 25)

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

11. (a) Explain the evolution of real-time FX in games.

Or

(b) Describe the role of Unreal Engine in real-time FX creation.

12. (a) How do you create a basic project in Unreal Engine?

Or

(b) Describe the workspace layout in Unreal Engine.

13. (a) Explain any two physics simulations used in game FX.

Or

(b) Describe how real-world physics is adapted into game environments.

14. (a) What are the key modules used in Unreal's particle system?

Or

(b) Describe how a simple smoke effect is built using particles.

15. (a) Explain the process of testing and debugging real-time FX in games.

Or

(b) What are some optimization methods when integrating FX into projects?

Part C (5 × 8 = 40)

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

16. (a) Discuss how real-time FX influence player immersion in modern gaming.

Or

(b) Compare pre-rendered and real-time visual effects in game development.

17. (a) Describe the steps in creating a fully functional FX project in Unreal Engine.

Or

(b) Explain asset creation, import, and management techniques in Unreal Engine.

18. (a) Explain how you would implement realistic explosion physics in a shooting game.

Or

(b) Discuss the application of gravity and collision simulation in FX.

19. (a) Describe in detail how to create a magical portal effect using Unreal particle systems.

Or

(b) What are advanced customization features in Unreal's Niagara particle system?

20. (a) Explain a real-time FX pipeline used in collaborative game development.

Or

(b) Describe the stages of integrating and optimizing particle FX into a completed level.