

Dr. Babasaheb Ambedkar Open University
Term End Examination January– 2026

Course	: DMA	Date	: 08/03/2026
Subject Code	: DMA-201	Time	: 11:30am to 01:45pm
Subject Name	: 3D Animation	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) **(30)**

1. Explain the 3D Content Creation Pipeline in Blender, detailing the roles of Modeling, Shading, Rigging, and Rendering.
2. Describe the 12 Principles of Animation as they apply to 3D space, specifically focusing on how "Squash and Stretch" is implemented in Blender.
3. Discuss the different types of 3D Objects available in Blender (Mesh, Curve, Surface, Meatball, etc.) and their specific use cases .
4. Explain the concept of Inverse Kinematics (IK) versus Forward Kinematics (FK) and describe the process of setting up an IK Solver Constraint.
5. What are Materials and Shaders? Explain the functions of Diffusion, Specular Reflection, and how they interact with simulated light.

Section B

Answer the following (Attempt any four) **(20)**

1. Explain the difference between Global and Local transformation orientations in Blender .
2. What is a Model Sheet or Character Model? Why is it essential for maintaining consistency during the production phase?
3. Describe the four Bézier Curve Handle types (Automatic, Vector, Aligned, Free) and how they affect curvature .
4. Explain the function and importance of Armature Layers in complex character rigging.
5. Differentiate between Bump Mapping, Normal Mapping, and Displacement Mapping .
6. Define "Onion Skinning" (Ghosting) in 3D animation and explain how it assists in creating smooth motion.

Section C

Part – A (Multiple Choice Questions)

(10)

- 1 Which editor in Blender is used to manage the hierarchy of objects in a scene?
A Property Editor B Outliner
C Info Editor D Timeline
- 2 The shortcut key to enter Edit Mode from Object Mode is:
A Shift+A B Tab
C Ctrl+Z D G
- 3 Which of the following is a Procedural Texture?
A JPEG Image B PNG Logo
C Marble D MP4 Video

- 4 The default 3D engine in Blender known for physically-based rendering is:
A Blender Internal B Cycles
C Game Engine D OpenGL
- 5 What does FPS stand for in the context of animation timing?
A Files Per Second B Frames Per Second
C Folds Per Second D Fast Pace Sequence
- 6 The point around which an object rotates or scales is called:
A Vertex B Edge
C Pivot Point D Face
- 7 Which tool is used to create a mirrored reversed version of a mesh?
A Duplicate B Spin
C Mirror D Extrude
- 8 In color theory, IOR stands for:
A Index of Reflection B Image over Resolution
C Index of Refraction D Inner Optical Range
- 9 A "Rig" typically consists of which object type?
A Mesh B Lamp
C Armature D Camera
- 10 Which shortcut is used to Grab/Move an object?
A S B R
C G D E

Part – B (Do as Directed)

(10)

State whether the following statements are true or false

- 1 "Solid" viewport shading is the default mode using colored surfaces and simple lighting. (True/False)
- 2 A storyboard is only useful in the post-production stage of a 3D film. (True/False)
- 3 NURBS curves are mathematically defined and can be used for smooth organic surfaces. (True/False)
- 4 The "X-sheet" or Dope Sheet is used to coordinate the timing of animation. (True/False)
- 5 Vertices are the individual points that make up a mesh structure. (True/False)
- 6 Secondary colors are created by mixing a primary color with a tertiary color. (True/False)
- 7 The "Constraint Stack" is evaluated from bottom to top in Blender. (True/False)
- 8 "Diffuse" light is viewpoint independent, meaning it looks the same from any angle. (True/False)
- 9 A "Parent" object always follows the transformations of its "Child" object. (True/False)
- 10 Keyframes are used to record the state of an object at a specific point in time. (True/False)
