Total number of printed pages: **Programme(UG)/Sem IV/UMCD 401**

2025

3D Modeling and Texturing

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any four** questions.*

Q1] A] Explain the process of 3D modeling and texturing. How do these two stages contribute to the development of realistic digital models in animation or gaming industries? (15)

B] Define Polygon and NURBS. Compare their characteristics and explain which modeling technique would be more suitable for creating a highly detailed organic model. (10)

Q2] A] Discuss the importance of tropology in 3D modeling and how it affects animation production. (10)

B] As a 3D modeler in animation film production, which type of mesh is preferred: triangles (tris) or quadrilaterals (quads)? Explain the reasons behind this preference. (15)

Q3] A] Write down the difference between vector and raster graphics. (10)

B] Explain the process of UV unwrapping in Maya and its important in animation and immersive experiences. (15)

Q4] A] Could you outline the procedural steps for configuring image planes in Autodesk Maya for the purpose of creating either organic or inorganic models? Please provide a detailed description of the process. (15)

B] Describe the Boolean operations in 3D modeling. How are Union, Difference and Intersection used in design? (10)

Q5] A] Explain the concept of edge loops and their importance in character modeling. (10)

B] What is the technical definition of texturing in the context of 3D graphics, and how does the Hyper Shade tool contribute to the texturing process? Please elaborate on the role of Hyper Shade within the texturing workflow. (15)

Q6] A] Discuss the impact of Maya's Arnold Renderer on 3d modeling and texturing? (10)

B Short Note: (3 X5 = 15)

(a) Edge loop Tool, (b) Lambert, (c) Cylindrical mapping in Maya

*****