

Duration 2^{1/2} Hours

Marks:75

- N.B**
- 1) All questions are compulsory
 - 2) Figures to the right indicate marks
 - 3) Mix-up of questions not allowed

Q1 a Choose the correct answer from the given options **5**

- 1 Identify the technique used to avoid flickering in animation
 - a) Blending b) Swap chain c) z-Buffering d) None
- 2 Which one of the following is not a DirectX 11 library
 - a) d3d.dll.lib b) d3dx11d.lib c) dxerror.lib d) dxgi.lib
- 3 Light bulb is a typical example of
 - a) Point light b) Parallel light c) Spot light d) None of the above
- 4 Which is the color that controls colour transparency
 - a) Green b) Alpha c) Blue d) Red
- 5 Using right hand rule, the angle of rotation about the x axis is called
 - a) Roll b) yaw c) pitch d) None

Q1 b Answer in one or two sentences **5**

- 1 Define 2D reflection
- 2 What is the task of input assembler stage in rendering pipeline
- 3 Define Clipping
- 4 Centre of gravity of a triangle
- 5 What are colliders in Unity

Q1 c Fill in the blanks taking value from the pool **5**
(Blending, Network manager, Gravity, Start, AR, VR)

- 1 The ----- method will be called if a GameObject is active
- 2 All rigid bodies are associated with ----- feature
- 3 ----- is a technique used to identify pixels of an object in front of another
- 4 Pokemon Go is a typical example of ----- experience
- 5 The features of Multi player game is managed by -----

Q2 Answer any Three from the following 15

- 1 Explain in detail the different 2D transformations
- 2 Describe the use of Lambert's law in lighting calculation
- 3 Write a short note on direction cosines
- 4 Define the term swap chain and explain how it is implemented
- 5 Describe the stages in rendering pipeline
- 6 Define a Shader and explain any two GPU shaders

Q3 Answer any Three from the following 15

- 1 Describe the process of interpolating two vectors
- 2 Explain cubic interpolation
- 3 Obtain the intersection points of two straight lines and two line segments
- 4 Describe the use of hessian normal form
- 5 Obtain the point of intersection of a circle with straight line
- 6 Write a short note on uniform B-Spline

Q4 Answer any Three from the following 15

- 1 What are smart Glasses? State their application
- 2 Define HMD and explain any two such devices
- 3 Describe the management of multiple players in game development
- 4 Define AR and give its applications
- 5 Explain Prefab in Unity
- 6 Discuss start() and update() methods in unity C# script

Q5 Answer any Three from the following 15

- 1 Describe the features of GPU
- 2 Explain the multisampling antialiasing technique
- 3 Write a short note on interpolating quaternions
- 4 Explain the terms Hierarchy, asset, and scene in relation to unity
- 5 Define Components and explain how they are used with game objects
