

School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem VI - R1UC606C - Algorithms for Game Development

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Identify the main components of a GameObject in lua. K1(2)
- 2) Explain the difference between prefix and postfix increment operators. Is lua support increment operator or not? K2(4)
- 3) Create a Lua script that uses logical expressions to validate user input for a password with specific requirements. K2(6)
- 4) (a) Create a script that generate minimum and maximum number using lua. (b) Develop a lua program to generate random number between 1 to 100. K3(9)
- 5) (a) Create simple Lua program named "SumOfNumbers.lua" that calculates the sum of numbers from 1 to a given input number (b) Implement a lua function to check number is armstrong or not. K3(9)
- 6) (a) Explain the concept of pathfinding algorithms in AI and their role in game navigation. (b) Name Lua libraries & frameworks commonly used for implementing AI in games. K5(10)
- 7) (a) Examine the impact of Lua's dynamic typing on debugging and maintaining game code (b) How do you create a custom class in Lua for game objects? K4(12)
- 8) (a) Develop a Lua script that implements a simple AI behavior, such as enemy movement or decision-making. (b) How do decision trees work in AI, and what advantages do they offer for game development? K5(15)
- 9) (a) Design a game script that changes the color of a Game Object when you click on it. (b) Create a script that moves an object based on user input (e.g., arrow keys). K5(15)
- 10) (a) Create a Lua module that optimizes memory usage by minimizing garbage collection overhead. (b) Can you name the main types of garbage collection algorithms used in programming languages? K6(18)