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## School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering

Mid Term Examination - Nov 2023

Duration : 90 Minutes

Max Marks : 50

### Sem V - E2UT501B - Unity in C#

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) Implement a simple collision detection between two objects in Unity using C#. K3 (6)
- 2) (a) Implement a method in C# to find the factorial of a given number using a object gaming recursive approach. K3 (9)  
(b) A farmer has a garden in the form of rectangle. Farmer would like to construct a path aroundThe garden with 2m wide.  
Write a program to accept length and breadth of the field. Calculate cost to construct the path at the rate of 20 rupees/Sqm.
- 3) (a) Create a third-person character controller that allows the player to move the character using Unity's Input system. K4 (8)  
(b) Implement a smooth camera follow feature.  
Analyze the performance implications of using Update() versus FixedUpdate() for certain operations.
- 4) (a) Given a scenario, design and implement a set of C# classes that represent objects and their interactions, demonstrating encapsulation and inheritance. K5 (15)  
(b) Check whether a character inserted is a vowel or consonant.
- 5) Create a script that allows the player to pick up and throw objects in Unity. K6 (12)