



The University of Fiji
(An Entity of Arya Pratinidhi Sabha of Fiji)



SCHOOL OF SCIENCE & TECHNOLOGY
Semester 2, 2025

FINAL EXAMINATION PAPER

ITC325: GAMES PROGRAMMING TECHNIQUES

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours)** to complete this paper.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This paper contains only one (1) section A. All questions are compulsory to answer.
6. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
7. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-25	Open-Ended Questions	100	180 minutes
		TOTAL	100	180 Minutes

Answer ALL the questions from this section in the answer booklet provided

1. In your terms, explain why you think Unity would be the best tool for game developers. (2 Marks)
2. What is the purpose of the Console section in Unity? (2 Marks)
3. Explain the process of linking a C# script to a sprite. Additionally, describe how you would begin by creating the script from scratch. (4 Marks)
4. Provide at least four objects that are considered game objects. (4 Marks)
5. If I want an object to fall in the game, how would I do it? Identify all the necessary steps and components to add. (4 Marks)
6. If I want an object to float up in the game, how would you do it? Identify all the necessary steps and components to add. (4 Marks)
7. Identify the purpose of the `isTrigger` property with an example. (2 Marks)
8. How would you add a Physics Material 2D, and why is it important? Provide a necessary example. (4 Marks)
9. How would you make an object bounce? What are the 2D components you add, and how would you add the bounce element with bounciness of 2? (4 Marks)
10. How would you print out a message in debug mode when the message is "Game Over"? Also, indicate which function it will be part of just by looking at the message. (2 Marks)
11. Write the script to move the player horizontally and vertically with proper methods (functions) (2 Marks)
12. What is the difference between screen and game windows? (2 Marks)
13. Explain how you would implement the Canvas on the main camera and add Text boxes to display scores. (4 Marks)
14. Differentiate between Sort Layers and Order Layers (2 Marks)
15. Why are Tagging Game Objects useful when dealing with multiple game objects? (2 Marks)
16. Explain why different classes are used in a single Unity script? (2 Marks)
17. Write code that will make an object move to the right with a speed of 3 during runtime. (4 Marks)

18. Explain the following functions (methods) and their purpose. (10 Marks)
- Start ()
 - Update ()
 - OnCollisionEnter2D ()
 - OnTriggerEnter2D ()
 - Jump () (custom function)
19. Explain the following Physics 2D Components, and on which game object would it be necessary to add them? (10 Marks)
- Box Collider
 - Circle Collider
 - Polygon Collider
 - Edge Collider
 - Rigidbody 2D
20. Explain the following functions and what parameters they accept. (4 Marks)
- transform.Translate
 - transform.Rotate
 - transform.localScale
21. Suppose there is an invisible line that, when the game object touches, the game comes to an end. To achieve this, the collider boundaries should be adjusted on the sides. Describe how you would adjust the collider boundaries. (4 Marks)
22. Explain the process involved in creating prefabs and how it makes a game meaningful. (3 Marks)
23. Figure 1 below illustrates the screen of a pinball game. Based on the image, answer the following questions.

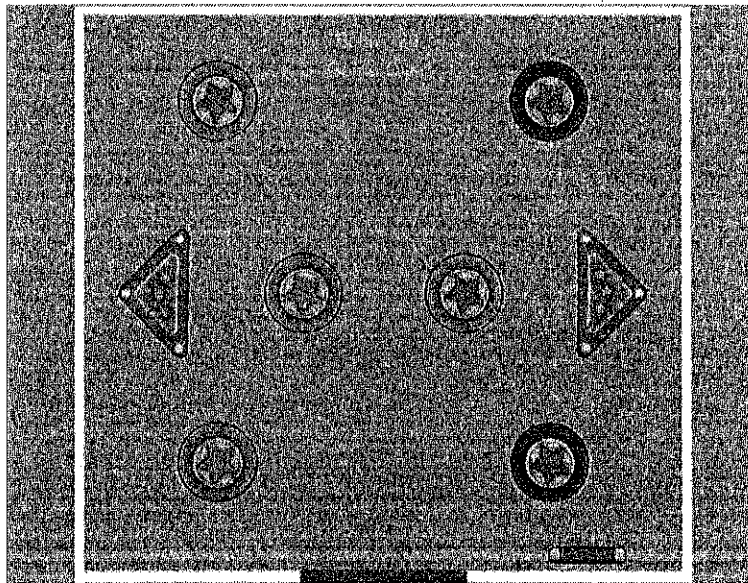


Figure 1 - Pinball Game

- a. List the 2D Physics collider components that need to be added to each of the game objects. (5 Marks)
- b. Write the missing lines of code for the pinball script below, replace “??” with correct code. (5 Marks)

```
using UnityEngine;
??
using System.Collections;

public class BallScript : MonoBehaviour {

    // declare variable to keep score
    ??
    // declare Text variable to display score
    ??
    // declare Text variable to display game over
    ??

    void Start()
    {
        // initialize game score
        ??
        // game is not over yet; display nothing
        ??
    }

    void OnTriggerEnter2D(Collider2D otherObject)
    {
        // display game over message
        ??
    }

    void OnCollisionEnter2D(Collision2D otherObject)
    {
        // increase the score
        ??
        // display new score
        ??
    }
}
```

24. Write an IF condition statement to display “Game Finished” if the “score” is greater than and equal to 29. (4 Marks)

```
void Update()
{
    // if
    ??
}
```

25. Write the code for the player movement using the necessary input manager keywords and explain the steps involved in reducing the sensitivity to 0.2. (5 Marks)

```
void Update()
{
    // player movement using input.GetAxis...
    ??
}
```