



UNIVERSITI KUALA LUMPUR
MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

FINAL EXAMINATION
MARCH 2026 SEMESTER

COURSE CODE : IVB 10804
COURSE NAME : PROGRAMMING 2
PROGRAMME NAME : BACHELOR OF GAME DEVELOPMENT TECHNOLOGY
WITH HONOURS
DATE : 23 JUNE 2026
TIME : 9.00 am – 11.00 am
DURATION : 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please CAREFULLY read the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of TWO (2) sections; Section A and Section B.
4. Answer ALL questions in Section A and B.
5. Please write your answers on the OMR FORM and ANSWER BOOKLET PROVIDED.
6. Answer all questions in English language ONLY.

THERE ARE 5 PAGES OF QUESTIONS, INCLUDING THIS PAGE.

Question 1

A student is developing a Unity game called Treasure Hunter. The player collects gems to increase score and unlock special rewards during gameplay. Study the script in Figure 1 below.

```
using UnityEngine;
public class TreasureGame : MonoBehaviour
{
    public int score = 0;
    void Update()
    {
        if (Input.GetKeyDown(KeyCode.Space))
        {
            score += 5;
            Debug.Log("Score: " + score);
        }

        if (score >= 20)
        {
            Debug.Log("Treasure Unlocked!"); }
    }
}
```

Figure 1

- a) Explain how the script processes player input and updates the score system when the SPACE key is pressed during gameplay. (6 marks)
- b) The developer wants to test whether the reward system works correctly. If the player presses the SPACE key 4 times, analyse the Console output and explain how the result is produced. (6 marks)
- c) Modify the script to improve the gameplay rewards system based on the following requirements:
 - i. Increase the score by 10 instead of 5
 - ii. Display the message "Master Hunter!" when the score reaches 50
 (8 marks)
- d) Explain how the use of Update() helps create responsive keyboard interaction in an interactive Unity game environment. (5 marks)

[Total marks : 25]

Question 2

A developer is improving an enemy spawning system for a shooting game. The system must create enemies automatically at different positions during the gameplay. Study the script in Figure 2 below.

```
using UnityEngine;

public class EnemySpawner : MonoBehaviour
{
    public GameObject enemyPrefab;

    void Start()
    {
        for (int i = 0; i < 3; i++)
        {
            Instantiate( enemyPrefab, new Vector3(i * 2, 0, 0), Quaternion.identity );
        }
    }
}
```

Figure 2

- a) Explain how the for loop supports the enemy spawning process in this game. (6 marks)
- b) Analyse the loop execution and determine how many objects will be created when the games start. Explain your answer. (5 marks)
- c) Modify the spawning logic so that 5 enemies are spawned vertically instead of horizontally. (8 marks)
- d) Explain how using Instantiate() can help the developer create a more dynamic enemy spawning system during gameplay. (6 marks)

[Total marks : 25]

Question 3

A student is developing a health recovery system in a Unity game. The system uses two scripts, PlayerHealth.cs and Potion.cs where the potion restores the player's health during two scripts for a health system in Unity. You can refer to the Figure 3 below:

PlayerHealth.cs

```
using UnityEngine;
public class PlayerHealth : MonoBehaviour
{
    public int health = 100;

    public void Heal(int amount)
    {
        health += amount;
        Debug.Log("Health: " + health); }
}
```

Potion.cs

```
using UnityEngine;
public class Potion : MonoBehaviour
{
    public PlayerHealth player;
    void OnMouseDown()
    {
        player.Heal(20);
        Destroy(gameObject); }
}
```

Figure 3

- a) Explain how the Potion script interacts with the PlayerHealth script to update the player's health during gameplay. (8 marks)
- b) Analyse the health value after the potion is clicked two times. Explain how the final value is produced. (5 marks)
- c) Modify the Heal() function to improve the health system based on the following requirements:
 - i. Health cannot exceed 150
 - ii. The message "Maximum Health Reached" is displayed when health reaches 150.

(12 marks)

[Total marks : 25]

Question 4

A student is creating a simple save for a Unity game using File I/O. The system stores player data into a text file and later retrieves the data during gameplay. Study the script in Figure 4 below.

```
using UnityEngine;
using System.IO;

public class SaveGame : MonoBehaviour
{
    void Start()
    {
        string path = "save.txt";

        StreamWriter writer = new StreamWriter(path);

        writer.WriteLine("PlayerScore:100");
        writer.Close(); }
}
```

Figure 4

- a) Explain how StreamWriter helps the game save player data into a text file during gameplay. (5 marks)
- b) State **TWO (2)** possible issues that may affect the game system if writer.Close() is not used properly. (6 marks)
- c) Write a new function called LoadData() that can retrieve and display saved player data from 'save.txt' during gameplay
 - i. Read the text from save.txt
 - ii. Display the content using Debug.Log()
 (8 marks)
- d) Identify **ONE (1)** possible exception that may occur during file reading and explain how it may affect the game system. (6 marks)

[Total marks : 25]

END OF THE SECTION