|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | **Fundamentals of Computer Vision** | **Course Code:** | **CS-4059** |
| **Program:** | **BS(Data Science)** | **Semester:** | **Spring 2024** |
| **Duration:** | **-** | **Total Marks:** | **10** |
| **Due Date:** | **9-May-24** | **Weight** |  |
| **Section:** | **B** | **Page(s):** | **1** |
| **Exam:** | **Quiz 2 v1** | **Roll No.** |  |
| **Instruction/Notes:**   * Read the Questions carefully. Make sure you have understood the requirements and expectations of the Questions. * Any form of cheating or plagiarism will result in an award of ZERO marks. * Crying is allowed but do it silently and please be sure to use your own tissue. | | | | |

**Question [10 marks]**

Consider a YOLO object detection model with the following parameters:

- Predicted bounding box coordinates (x, y, w, h): (6, 7, 8, 9)

- Ground truth bounding box coordinates (x', y', w', h'): (5, 6, 9, 10)

- Number of classes: 4

- Confidence score for object presence: 0.9

Given that the YOLO loss function components are defined as follows:

Calculate the total YOLO loss for the given parameters.