



**BRAC University**  
**Department of Computer Science and Engineering**  
CSE 422: Artificial Intelligence  
Quiz 04: Fall 2024    Time: 30 Minutes    Marks: 10

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Name:	ID:
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1. What is learning rate? How does that affect the gradient descent algorithm? [3]

2. What are the disadvantages of the gradient descent algorithm? How can they be handled? [2]

3. In the gradient descent algorithm shown in class, a loop was there with *maxIter* to terminate the algorithm. Is there any other alternate without using the number of iterations to stop the training? Please explain. [2]

4. Following error / loss function is used for linear regression.

$$\mathcal{L}(w) = \frac{1}{2} \sum_i (\hat{y}(i) - y(i))^2$$

Is it possible to use this loss function for logistic regression and gradient descent? What changes will be required in the gradient descent algorithm to allow this? [3]