Score: **89%**

No. of questions: **9**

Correct answer: **8**

Incorrect answer: **1**

Show incorrect attempt only ⬤

Question 1 ✓　　　　　　　　　　　　　　　1 Mark

Is Logistic regression a supervised machine learning algorithm?

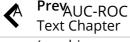| A	Yes	✓

B	No	

Correct Answer: A. Yes

Yes, logistic regression is a supervised learning algorithm because it uses true labels for training. Supervised learning algorithm should have input variables (x) and a target variable (Y) when you train the model.

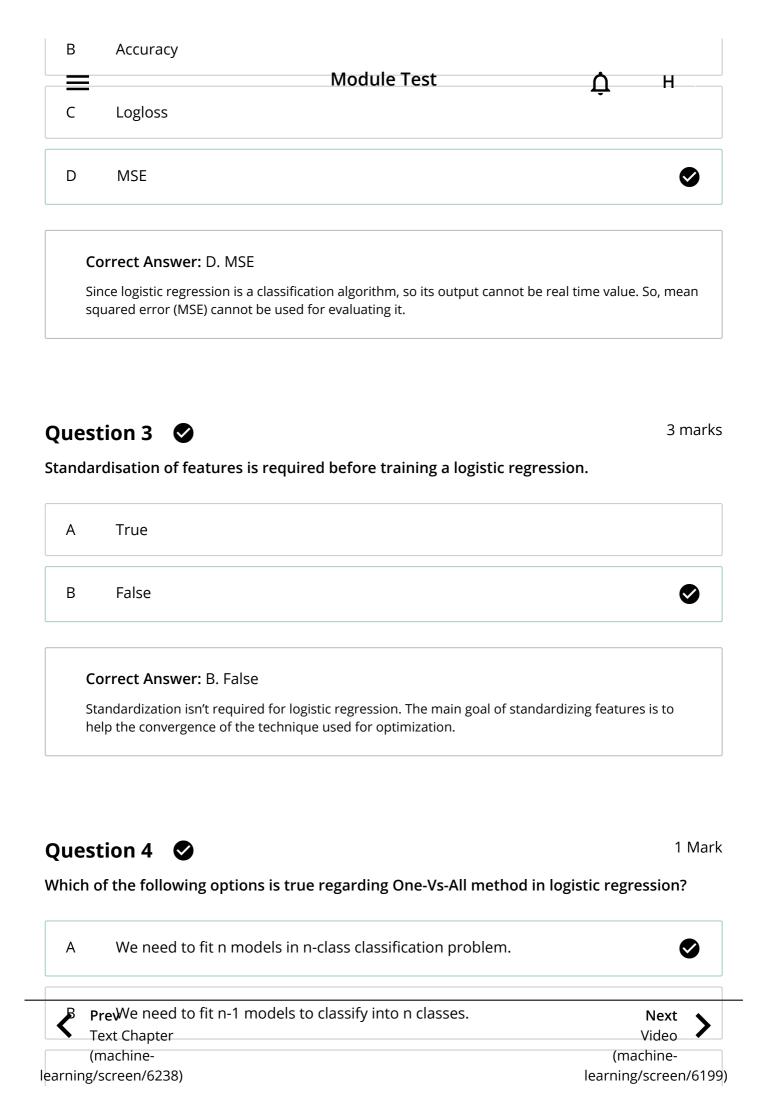## Question 2 ✓　　　　　　　　　　　　　　　2 Marks
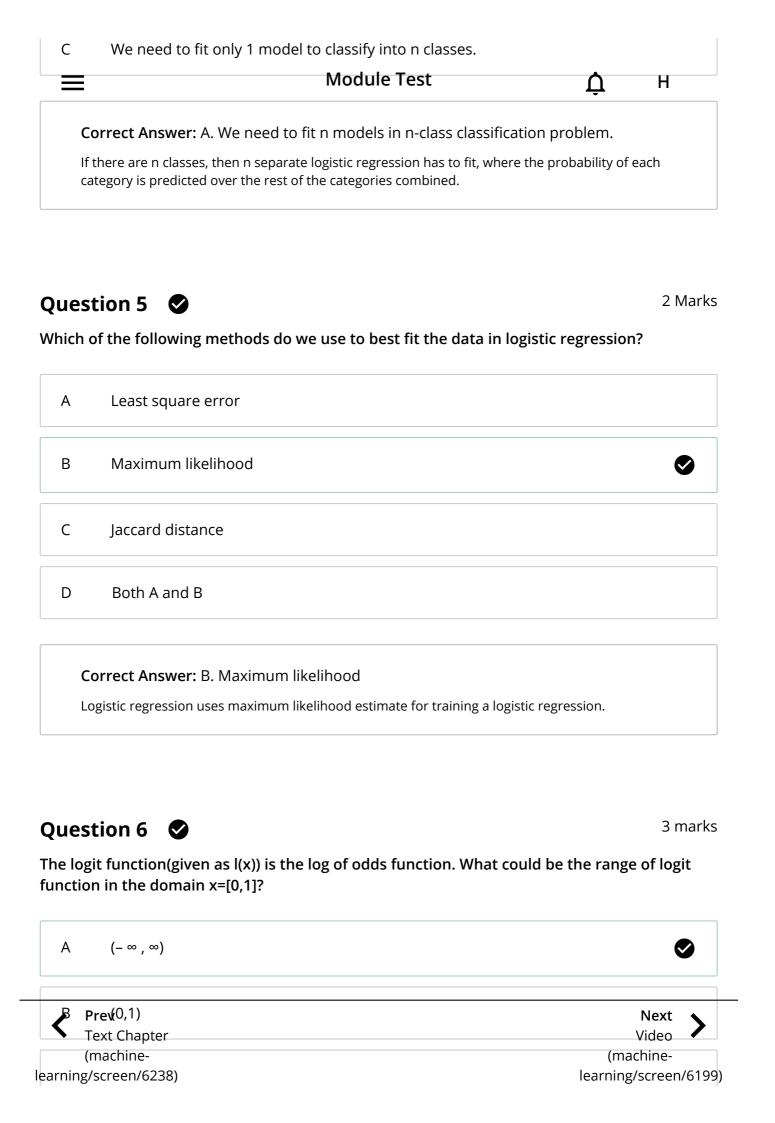
Which of the following evaluation metrics cannot be applied in case of logistic regression output to compare with the target?

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B   Accuracy

C   Logloss

D   MSE ✓

Correct Answer: D. MSE

Since logistic regression is a classification algorithm, so its output cannot be real time value. So, mean squared error (MSE) cannot be used for evaluating it.

Question 3 ✓
3 marks

Standardisation of features is required before training a logistic regression.

A   True

B   False ✓

Correct Answer: B. False

Standardization isn't required for logistic regression. The main goal of standardizing features is to help the convergence of the technique used for optimization.

Question 4 ✓
1 Mark

Which of the following options is true regarding One-Vs-All method in logistic regression?

A   We need to fit n models in n-class classification problem. ✓

B   We need to fit n-1 models to classify into n classes.

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C   We need to fit only 1 model to classify into n classes.

> **Correct Answer:** A. We need to fit n models in n-class classification problem.
>
> If there are n classes, then n separate logistic regression has to fit, where the probability of each category is predicted over the rest of the categories combined.

Question 5 ✓

2 Marks

Which of the following methods do we use to best fit the data in logistic regression?

A	Least square error

B	Maximum likelihood	✓

C	Jaccard distance

D	Both A and B

> **Correct Answer:** B. Maximum likelihood
>
> Logistic regression uses maximum likelihood estimate for training a logistic regression.

Question 6 ✓

3 marks

The logit function(given as l(x)) is the log of odds function. What could be the range of logit function in the domain x=[0,1]?

A	$(-\infty, \infty)$	✓

C	(0, ∞)

D	(- ∞, 0)

Correct Answer: A. (– ∞ , ∞)

For our purpose, the odds function has the advantage of transforming the probability function, which has values from 0 to 1 into an equivalent function with values between 0 and ∞. When we take the natural log of the odds function, we get a range of values from -∞ to ∞.

Question 7 ✅

1 Mark

Is it possible to apply a logistic regression algorithm on a 3-class classification problem?

A	Yes	✅

B	No

Correct Answer: A. Yes

Yes, we can apply logistic regression on 3-class classification problem. We can use One-Vs-All method for 3-class classification in logistic regression.

Question 8 ⊗

2 Marks

Can a logistic regression classifier work perfectly on a non-linear data by detecting the non-linear patterns in the data?

A	Yes	⊗

B	No

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Correct Answer: B. No

No, logistic regression only forms linear decision surface and hence will not perform well on non linearly separable.

Module Test

Question 9 ✓

3 marks

Let's say you are training a One-vs-All classifier model on a given dataset where the target variable has categories as 0,1,2,3,4,5,6. How many models will be required for making the final prediction?

| A | 7 | ✓ |

| B | 6C2 |

| C | 6 |

| D | 2 |

Correct Answer: A. 7

If there are 'n' classes, then 'n' separate logistic regression has to fit, where the probability of each category is predicted over the rest of the categories combined.

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