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<b>Grade</b>	5.00 out of 9.00 (55.56%)


**Question 1**

Incorrect

Mark 0.00 out of  
1.00

Which statement about the iterative optimization algorithms for general machine learning problems is incorrect

Select one:

- ☐ a. They are insensitive to the initial values
- ☒ b. They might end at local minima 
- ☐ c. Both gradient descent algorithms and stochastic gradient descent algorithms are iterative optimization algorithms

The correct answer is: They are insensitive to the initial values

**Question 2**

Incorrect

Mark 0.00 out of 1.00

Which statement is incorrect about the understanding of Bias and Variance in machine learning?

Select one:

- ☒ a. Variance is an indication of how sensitive the model's predictions are to the data that is used for training ❌
- ☐ b. Given several models, the model with smallest bias is the best model
- ☐ c. Bias is an indication of much systematic error a model makes

The correct answer is: Given several models, the model with smallest bias is the best model

**Question 3**

Correct

Mark 1.00 out of 1.00

Which statement about basis function is *incorrect*?

Select one:

- ☐ a. Basis functions are functions of the input variables
- ☒ b. Basis functions in linear regression models are linear ✔️
- ☐ c. Basis functions are linearly combined by the model parameters (coefficients)

The correct answer is: Basis functions in linear regression models are linear

**Question 4**

Correct

Mark 1.00 out of 1.00

Which one is *not* an advantage of stochastic gradient descent algorithm over gradient descent algorithm?

Select one:

- ☐ a. It is applicable even if not all data fits into main memory or is available at the same time
- ☐ b. It is more computationally efficient for large data sets
- ☒ c. It is insensitive to the initial values ✓

The correct answer is: It is insensitive to the initial values

**Question 5**

Correct

Mark 1.00 out of 1.00

Which statement about linear regression is *incorrect*?

Select one:

- ☒ a. Linear regression models describe a linear function in the input variables ✓
- ☐ b. Linear regression models describe a linear function of the model parameters
- ☐ c. The target variable is continuous

The correct answer is: Linear regression models describe a linear function in the input variables

**Question 6**

Incorrect

Mark 0.00 out of 1.00

Which one below is an indication that you need to train your model with smaller sets of features?

Select one:

- ☐ a. When your model has a high variance
- ☒ b. When your model has a high bias ✗

The correct answer is: When your model has a high variance


**Question 7**

Incorrect

Mark 0.00 out of 1.00

Which statement about the gradient descent algorithm is *incorrect*

Select one:

- ☐ a. It is an iterative algorithm
- ☒ b. It needs to process the entire training set in one optimization step 
- ☐ c. For each iteration, the parameters are updated in the direction of the gradient of the training error

The correct answer is: For each iteration, the parameters are updated in the direction of the gradient of the training error


**Question 8**

Correct

Mark 1.00 out of 1.00

Which statement about bias and variance is *incorrect*?

Select one:

- ☐ a. Very flexible models have low bias and high variance, and relatively rigid models have high bias and low variance
- ☒ b. A high bias and low variance is an indication of overfitting 
- ☐ c. There is usually a trade-off between bias and variance

The correct answer is: A high bias and low variance is an indication of overfitting


**Question 9**

Correct

Mark 1.00 out of 1.00

Suppose your model has a high error on a test set. Which one below is an indication that training your model on a larger dataset can reduce the test error?

Select one:

- ☒ a. Your model has a high variance 
- ☐ b. Your model has a high bias

The correct answer is: Your model has a high variance

