Status	Finished
Started	Sunday, 17 August 2025, 10:00 PM
Completed	Sunday, 17 August 2025, 10:11 PM
Duration	11 mins 22 secs
Grade	**6.00** out of 9.00 (**66.67**%)

Question 1

Correct

Mark 1.00 out of 1.00

Which statement about machine learning is incorrect?

Select one:

a. The objective of machine learning is to predict the target value for possible new values of the input variables.

b. The objective of machine learning is to learn a function so that it can be used to map the input variables accurately to the target value on the training set. ✓

c. The ultimate goal of machine learning is to build models that can generalize well to unseen examples

The correct answer is: The objective of machine learning is to learn a function so that it can be used to map the input variables accurately to the target value on the training set.

Question 2

Correct

Mark 1.00 out of 1.00

Which statement is incorrect?

Select one:

a. Predicting the temperature of water discharged by a power station is a classification problem

b. For supervised learning, the target variables of corresponding input variables are given in the training set

c. Clustering is usually an unsupervised learning method

The correct answer is: Predicting the temperature of water discharged by a power station is a classification problem

Question 3

Correct

Mark 1.00 out of 1.00

Which statement is correct?

Select one:

a. K-NN regression is a parametric model

b. We can use test data to optimize the parameters so that the model can generalize well to unseen data.

c. Uncertainty of machine learning is caused by finite data set and noise

The correct answer is: Uncertainty of machine learning is caused by finite data set and noise

Question 4

Incorrect

Mark 0.00 out of 1.00

Which statement about under- and overfitting is incorrect?

Select one:

- a. Usually, for overfitting, the model has small training error but large test error ⊗
- b. Usually, we can recognise overfitting by monitoring the training error.
- c. Usually, for under-fitting, the model has both large training error and test error

The correct answer is: Usually, we can recognise overfitting by monitoring the training error.

Question 5

Incorrect

Mark 0.00 out of 1.00

Which statement about the regularisation parameter is incorrect?

Select one:

- a. As the parameter value increases, the training error becomes larger
- b. For large parameter values, the model will be underfitted ⊗
- c. For large parameter values, the model will be overfitted

The correct answer is: For large parameter values, the model will be overfitted

Question 6

Correct

Mark 1.00 out of 1.00

When fitting a linear model with polynomial basis functions, which of the following has no impact on the model complexity?

Select one:

- a. The values of the input variables ✓
- b. The order of the polynomial basis functions
- c. The regularization parameter

The correct answer is: The values of the input variables

Question 7

Correct

Mark 1.00 out of 1.00

Which statement about probability distributions is incorrect?

Select one:

- a. Probability densities are between 0 and 1. ✓
- b. Probabilities are between 0 and 1.
- c. The sum of probability masses over all possible outcomes of a random variable is equal to 1.

The correct answer is: Probability densities are between 0 and 1.

Question 8

Incorrect

Mark 0.00 out of 1.00

Assuming that *w* is the parameter we need to learn and *D* is the training data, which expression describes the likelihood function in Baysian Theorem?

Select one:

a. p(D|w)

b. p(w|D) ⊗

c. p(D)

The correct answer is: p(D|w)

Question 9

Correct

Mark 1.00 out of 1.00

Assuming that *w* is the parameter to be learned and *D* is the training data, which expression defines the prior distribution in the Bayesian approach?

Select one:

a. p(w) ✓

b. p(w|D)

c. p(D|w)

The correct answer is: p(w)