Status	Finished
Started	Sunday, 28 September 2025, 8:18 PM
Completed	Sunday, 28 September 2025, 8:30 PM
Duration	11 mins 22 secs
Grade	**6.00** out of 8.00 (**75%**)

Question 1

Complete

Mark 0.00 out of 1.00

which one below about K-means algorithm is incorrect?

Select one:

- ○ a. It's an iterative algorithm
- ○ b. A data point can be assigned to many clusters
- ○ c. It's sensitive to initial values

Question 2

Complete

Mark 1.00 out of 1.00

Which one below about the latent variable clustering models is incorrect?

Select one:

- ○ a. We do the estimate for both the latent variables and the parameters in the generative story during the optimization process
- ○ b. The cluster labels are not given.
- ◉ c. The objective likelihood function for latent variable models is the joint probability of input data instances and latent variables

Question 3

Complete

Mark 1.00 out of 1.00

Which one below about the Gaussian Mixture Models is incorrect?

Select one:

- ⦿ a. We can easily find its analytical optimal solutions by setting the partial derivatives with respect to the parameters to 0

- ○ b. Expectation Maximization algorithm can be used to optimize Gaussian Mixture Models

- ○ c. It's a latent variable model

Question 4

Complete

Mark 1.00 out of 1.00

Which one below about Expectation Maximization (EM) algorithm is incorrect?

Select one:

- ○ a. It is an iterative algorithm

- ○ b. In M step, a new function, which is usually called as Q function, is used to optimize the current parameters

- ⦿ c. There is no guarantee to increase the log marginal likelihood of input data instances in each iteration.

Question 5

Complete

Mark 1.00 out of 1.00

Which one below about the comparison between perceptron and neuron is incorrect?

Select one:

- ⦿ a. Perceptron is not suitable for linearly separable data

- ○ b. Perceptron has a binary output based on threshold

- ○ c. Neuron has a continuous output

Which statement is incorrect?

Select one:

○ a. Neural networks can only have one output

○ b. Neural networks are a general class of parametric nonlinear functions from a vector of input variables to a vector of output variables

○ c. In neural networks, the inputs are fed forward to generate the output

Which one below about the power of neural network is incorrect?

Select one:

○ a. More hidden units mean higher prediction accuracy on test data sets.

○ b. The model class corresponding to neural networks can approximate the target decision boundary to any required precision in classification problem.

○ c. The model class corresponding to neural networks can represent almost any function (given some minor conditions) provided the network has a sufficiently large number of hidden units

Which one below is not the correct method to prevent overfitting for neural networks?

Select one:

○ a. Add regularization terms

○ b. Use a large training data

○ c. Use shallow architecture