Test Statistics: Mock MCQ Quiz- Requires Respondus LockDown Browser

The statistics are calculated based only on the attempts being used in the grading option (Last attempt, First attempt, Lowest Score, Highest Score or Average of Scores). If Average of Scores is the grading option, then all attempts are included in the statistics.

Name	Mock MCQ Quiz- Requires Respondus LockDown Browser
Attempt Score	0.00009
Attempts	87 (Total of 168 attempts for this assessment)
Marked Attempts	87
Attempts that Need Grading	0
Instructions	There are **15 questions**. Each question has 0.00001 mark. The total mark is **0.00015**, which will have no effect on your final mark due to rounding. Each question has **only one** answer. This quiz is a **closed book** assessment. You can only use the **Respondus LockDown Browser**, availably only on **university desktops** in computer rooms (you **cannot** do this on your laptop or home desktop). You are **NOT** allowed to use any other computer/calculator/devices, and any references/books/notes/dictionary. You have **45 minutes** to complete this quiz. Your quiz will be **automatically submitted** when time is up.

Alignments

Question 1: Multiple Choice

Average Score 0.00001 points

Select one of the following mathematical equalities that is TRUE.

Correct		Per cent Answered
	$p(x\|y) = p(y\|x)p(y)$	5.747%
	$p(y\|x) = p(x, y) / [p(x\|y)p(x)]$	9.195%
✓	$p(y)/p(x)=p(y\|x)/p(x\|y)$	74.713%
	$p(y, x)/p(x)=p(y\|x)/p(y)$	4.598%
	Unanswered	5.747%

Question 2: Multiple Choice

Average Score 0.00001 points

There are three vectors, x = [1,3,-5], y = [4,-2,-1] and z =[-2,-5,2]. Which of the following is TRUE?

Correct		Per cent Answered
	x and y are orthogonal.	2.299%
✓	y and z are orthogonal	75.862%
	x and z are orthogonal.	5.747%
	x and y and z are orthogonal.	2.299%
	None of the above	6.897%
	Unanswered	6.897%

Question 3: Multiple Choice

Average Score 0.00001 points

Which of the following methods is NOT solving a regression problem?

Correct		Per cent Answered
	Linear regression	0%
	Bayesian regression	8.046%
✓	Logistic regression	65.517%
	None of the above	19.54%
	Unanswered	6.897%

Question 4: Multiple Choice

Average Score 0.00001 points

Which of the following is a supervised learning method?

Correct	Per cent Answered

	Principal component analysis	5.747%
	K-means clustering	10.345%
☑	Naïve Bayes	66.667%
	None of the above	9.195%
	Unanswered	8.046%

Question 5: Multiple Choice

Average Score 0.00001 points

Which of the following is NOT an objective function

Correct		Per cent Answered
☑	Prediction function	73.563%
	Error function	6.897%
	Loss function	5.747%
	Cost function	6.897%
	Unanswered	6.897%

Question 6: Multiple Choice

Average Score 0.00001 points

We model a 3x1 feature vector using independent multivariate Gaussian distribution. How many parameters do we need to specify this multivariate distribution?

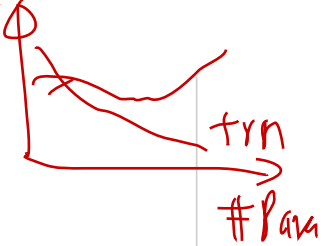
Correct		Per cent Answered
	2	12.644%
	3	13.793%
☑	6	56.322%
	9	8.046%
	12	1.149%
	Unanswered	8.046%

Question 7: Multiple Choice

Average Score 0.00001 points

Which of the following statements about the overfitting problem is FALSE?

Correct		Per cent Answered
✓	It occurs when a model has too many parameters in comparison to the amount of data points.	6.897%
☑	In overfitting, both the performance on the	60.92%



training examples and that on unseen data becomes worse.	
It typically fails drastically when making predictions of unseen data because it does not learned to generalise.	9.195%
In order to avoid overfitting, it is necessary to use additional techniques such as crossvalidation, that can indicate when further training is not resulting in better generalisation.	10.345%
An overfit model typically has poor predictive capability.	3.448%
Unanswered	9.195%

Question 8: Multiple Choice

Average Score 0 points

We have two Gaussian distributions. Which of the following operations on these two distributions will NOT result in a Gaussian distribution?

out of scope

Correct		Per cent Answered
	Sum	9.195%
	Multiply	5.747%
☑	Divide	33.333%
	None of the above	43.678%
	Unanswered	8.046%

Question 9: Multiple Choice

Average Score 0.00001 points

We have a dataset with 100 samples. Which of the following is the MOST time consuming in general?

Correct		Per cent Answered
☑	Leave one out cross validation	78.161%
	5-fold cross validation	1.149%
	10-fold cross validation	4.598%
	Hold-out validation	6.897%
	Unanswered	9.195%

Question 10: Multiple Choice

Average Score 0.00001 points

Why is PCA (principal component analysis) called an unsupervised learning algorithm?

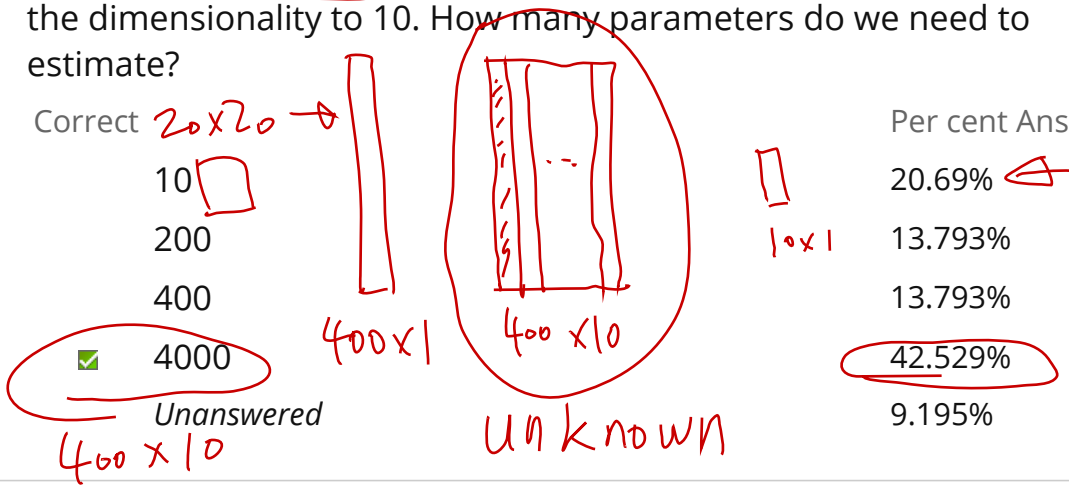
Correct		Per cent Answered
✓	Because it converts a dataset consisting of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components.	14.943%
	Because the number of principal components is not known.	2.299%
	Because it does not know when to terminate the learning algorithm.	4.598%
☑	Because it does not use class labels during the learning process.	65.517%
	Because, prior to learning, we do now know the variance of each principal component.	3.448%
	Unanswered	9.195%

Question 11: Multiple Choice

Average Score 0 points

We have a set of 20x20 binary images. We want to use PCA to reduce the dimensionality to 10. How many parameters do we need to estimate?

Correct		Per cent Answered
	10	20.69%
	200	13.793%
	400	13.793%
☑	4000	42.529%
	Unanswered	9.195%



Question 12: Multiple Choice

Average Score 0.00001 points

Which of the following models is a generative model?

Correct		Per cent Answered
	Linear regression	6.897%
☑	Bayesian regression	50.575%
	k-means clustering	20.69%
	Logistic regression	12.644%

Bayesian
p(x, y)
p(y|x)

Unanswered	9.195%

Question 13: Multiple Choice

Average Score 0 points

Which one of the following is NOT true of the naive Bayes classifier?

Correct	Per cent Answered
The features are conditionally independent given the class.	9.195%
✅ The features are distributed according to a multivariate Gaussian.	49.425%
The data is conditionally independent given the model parameters.	16.092%
The class labels are discrete values.	13.793%
Unanswered	11.494%

Question 14: Multiple Choice

Average Score 0.00001 points

In logistic regression, the inner product between the feature vector and the weight vector aims to approximate:

Correct	Per cent Answered
✅ The logarithm of the odds ratio between the positive and negative classes.	50.575%
The probability of the positive class being correct.	9.195%
The mean of the Gaussian random variable which is most likely to generate the given class conditional density.	25.287%
The logarithm of the probability of the positive class.	3.448%
Unanswered	11.494%

Question 15: Multiple Choice

Average Score 0.00001 points

Supposing x and w are both vectors, which of the following python code gives you a vector?

Correct	Per cent Answered
np.sum(x*w)	5.747%
✅ x*w	55.172%
np.outer(x,w)	19.54%

np.sum(w*x**2)	5.747%
np.sum(x*w)**2	2.299%
Unanswered	11.494%

← **OK**