Unit 3: Probability Theory Solutions

Question 1

Inherent stochasticity in the system being modeled, incomplete observability, and incomplete modeling are all sources of _____.

A. Bayesian probability

B. error

C. variance

D. uncertainty

Question 2

Probability distributions for continuous variables are called _____ _____ _____.

A. Probability Density Functions

B. Marginal Probability Functions

C. Joint Probability Distributions

D. Continuous Probability Distributions

Question 3

Fill in the Blank: The mean, variance, and standard deviation are given by the following three parameters: $\underline{\mu}$, $\underline{\sigma^2}$, and $\underline{\sigma}$.

Question 4

For discrete variables, which function below would give the expectation value?

A. $\mathbb{E}[f(x)] = \sum_x P(x)f(x)$

B. $\mathbb{E}[f(x)] = \int p(x)f(x)dx$

Question 5

The most commonly found probability distribution in nature is the _____ distribution.

A. Laplace

B. Gaussian (normal)

C. Exponential

D. Bernoulli