**Module B.2: Basic Statistical Concepts**

**Quiz 2 Solutions**

**True and False:**

1. **The probability of the intersection of two events A and B, is equal to the sum of the probabilities of the two events minus the probability of union of A and B.**

True

1. **If two events are mutually exclusive, i.e., they cannot occur simultaneously ever, it is the same as the events being independent.**

False

1. **The number of heads that turn up in 5 simultaneous coin tosses is a discrete random variable.**

True

1. **Since the CDF is a cumulative sum of PDF, the value of CDF can exceed 1.**

False

1. **In the Normal Distribution, the mean is the most recurring value of the random variable.**

True

1. **According to the Central Limit theorem, if we add large number of independent observations that obey the exponential distribution, the sample mean approaches the exponential distribution.**

False

1. **Using an average value to represent data may be misleading.**

True

1. **Generally, the alternate hypothesis is to be accepted by default unless there is evidence against it.**

False

1. **Type II errors are when the null is false but we do not reject the null hypothesis.**

True