**MCQ OF Poisson distribution**

**Question 1:** What type of events is the Poisson distribution commonly used to model?

A) Continuous events B) Discrete events C) Binomial events D) None of the above

**Solution 1:** B) Discrete events

**Question 2:** The Poisson distribution is often used to describe the number of events occurring in a fixed interval of time or space when:

A) Events occur at a constant rate B) Events occur at random intervals C) Events are independent of each other D) All of the above

**Solution 2:** D) All of the above

**Question 3:** In a Poisson distribution, the mean (average) and variance are:

A) Always equal B) Always different C) Sometimes equal, sometimes different D) Equal only for small sample sizes

**Solution 3:** A) Always equal

**Question 4:** If the average number of customers arriving at a store per hour follows a Poisson distribution with a mean of 5, what is the probability of 3 customers arriving in the next hour?

A) 0.1008 B) 0.0613 C) 0.1804 D) 0.3046

**Solution 4:** B) 0.0613

**Question 5:** In a Poisson distribution, as the mean (average) number of events increases:

A) The distribution becomes more spread out B) The distribution becomes more concentrated around the mean C) The distribution becomes bimodal D) The distribution becomes negatively skewed

**Solution 5:** B) The distribution becomes more concentrated around the mean

**Question 6:** If the average number of accidents at a busy intersection per day is 2, what is the probability of exactly 4 accidents occurring in a given day?

A) 0.0902 B) 0.1805 C) 0.1465 D) 0.0902

**Solution 6:** A) 0.0902

**Question 7:** In a Poisson distribution, the probability of observing more events than the mean is:

A) Always zero B) Equal to the probability of observing fewer events than the mean C) Greater than zero D) Always one

**Solution 7:** C) Greater than zero