Q1. What is a probability distribution, exactly? If the values are meant to be random, how can you predict them at all?

Ans: A probability distribution describes how random variables are distributed.

It tells you what values ​​a random variable is most likely to assume, and what values ​​it is least likely to assume. Based on previous data and the occurrence of random events, outcomes can be predicted in terms of probabilities.

Q2. Is there a distinction between true random numbers and pseudo-random numbers, if there is one? Why are the latter considered “good enough”?

Ans: True random numbers are real physical values, while pseudorandom numbers are generated internally by the program. The latter is considered good enough because it has a kind of uniform distribution.

Q3. What are the two main factors that influence the behaviour of a "normal" probability distribution?

Ans: Normal Probability Distribution are influenced by two factors mean and the variance.

Q4. Provide a real-life example of a normal distribution.

Ans: A Real-life example of a normal distribution are heights or blood pressure measurements

Q5. In the short term, how can you expect a probability distribution to behave? What do you think will happen as the number of trials grows?

Ans: Variance will decrease with number of trials

Q6. What kind of object can be shuffled by using random.shuffle?

Ans: lists (list), strings (str) and tuples (tuple) objects can be shuffled by using random.shuffle.

Q7. Describe the math package's general categories of functions.

Ans: The Math package's general categories of functions are:

* Trigonometric functions
* Quadratic functions
* Exponential functions
* Hyperbolic functions
* Periodic functions
* Arithmetic functions
* Logarithmic functions
* Conversions to Integer

Q8. What is the relationship between exponentiation and logarithms?

Ans: Exponentiation and logarithms are inverse of each other.

Q9. What are the three logarithmic functions that Python supports?

Ans:

* log2(x) - logarithmic value of x to base 2
* log10(x) - logarithmic value of x to base 10
* log1p(a) - This function is used to compute logarithm(1+a) .