**Q1) What is a hypothesis in statistics?**

1. A guess about the outcome of an experiment
2. A proven fact
3. A random number generator
4. A programming language

**Q2) What is the mechanism of hypothesis testing?**

1. Analyzing data
2. Conducting experiments
3. Formulating a null and alternative hypothesis
4. All of the above

**Q3) What is the significance level commonly used in hypothesis testing?**

1. 0.01
2. 0.05
3. 0.10
4. 0.25

**Q4) Which of the following is a statement that is being tested in hypothesis testing?**

1. Alternative fact
2. Null hypothesis
3. Alternative hypothesis
4. Alternative reality

**Q5) What is estimation in statistics?**

1. A method used to test hypotheses about a population parameter.
2. The process of drawing conclusions about a population based on sample data.
3. The process of calculating the mean and standard deviation of a population
4. The process of collecting data from a population

**Q6) What is the mechanism of hypothesis testing?**

1. Collecting data, conducting experiments, and analyzing data
2. Formulating a null hypothesis and an alternative hypothesis, collecting data, and analyzing data
3. Calculating the mean and standard deviation of a population
4. Drawing conclusions about a population based on sample data

**Q7) What is a p-value?**

1. The probability of rejecting the null hypothesis
2. The probability of observing a test statistic as extreme as, or more extreme than, the one observed, assuming the null hypothesis is true.
3. The probability of observing a test statistic as extreme as, or more extreme than, the one observed, assuming the alternative hypothesis is true.
4. The probability of observing a test statistic as extreme as, or more extreme than, the one observed, without assuming any hypothesis is true.

**Q8) What is the student t distribution?**

1. A probability distribution used to test hypotheses about the mean of a population when the sample size is small.
2. A probability distribution used to test hypotheses about the mean of a population when the sample size is large.
3. A measure of central tendency.
4. A measure of variability.

**Answers:**

**Q1)** A guess about the outcome of an experiment. (Option A)

**Q2)** Formulating a null and alternative hypothesis (Option C)

**Q3)** 0.05 (Option B)

**Q4)** Null hypothesis (Option B)

**Q5)** The process of drawing conclusions about a population based on sample data. (Option B)

**Q6)** Formulating a null hypothesis and an alternative hypothesis, collecting data and analyzing data.(Option B)

**Q7)** The probability of observing a test statistic as extreme as, or more extreme than, the one observed, assuming the null hypothesis is true. (Option B)

**Q8)** A probability distribution used to test hypothesis about the mean of a population when the sample size is small. (Option A)