Sheet – 02: Randomness and Variability

1) What is the **margin of error** in a survey?
   (a) The percentage of people who did not answer the survey.
   (b) The percentage of people who answered the survey incorrectly.
   (c) A measure of the expected variability from one random sample to the next
   (d) A measure of the number of people who were not surveyed.
2) What is **statistical significance** in testing?
   (a) The difference between the results for the two treatments is so large that it would be rare to see such a difference by ordinary random variation.
   (b) The difference between the results for the two treatments is so small that it would be rare to see such a difference by ordinary random variation.
   (c) The difference between the results for the two treatments is due to ordinary random variation.
   (d) The difference between the results for the two treatments is due to the size of the sample.
3) What is the role of **probability** in statistics?
   (a) To quantify how likely various possible outcomes are
   (b) To make the results unpredictable
   (c) To make the results haphazard
   (d) To make the results chaotic
4) When conducting a survey, why is it important to have a **representative sample**?
   (a) To ensure the survey results are statistically significant.
   (b) To ensure the survey results accurately reflect the population.
   (c) To ensure the survey results are unpredictable.
   (d) To ensure the survey results are chaotic.
5) What does a **confidence interval** in a survey indicate?
   (a) The percentage of people who did not answer the survey.
   (b) The percentage of people who answered the survey incorrectly.
   (c) The range within which the true population parameter is likely to fall.
   (d) The number of people who were not surveyed.
6) In the context of statistics, what does **bias** refer to?
   (a) The process of making the results unpredictable
   (b) The systematic error introduced into sampling or testing by selecting or encouraging one outcome or answer over others.
   (c) The process of obtaining good samples and conducting experiments
   (d) The process of making the results haphazard
7) What is the main advantage of **random sampling**?
   (a) It ensures that every member of the population has an equal chance of being selected.
   (b) It ensures that the sample is representative of the population.
   (c) Both (a) and (b).
   (d) None of the above.
8) Which of the following is NOT a type of random sampling?
   (a) Simple random sampling.
   (b) Stratified random sampling.
   (c) Cluster random sampling.
   (d) Biased sampling.
9) In the context of statistics, what does **stratified random sampling** refer to?
   (a) A sampling method where every member of the population has an equal chance of being selected.
   (b) b) A sampling method where the population is divided into groups and a few groups are randomly selected
   (c) A sampling method where the population is divided into groups and some members from each group are selected.
   (d) A sampling method where the most convenient members of the population are selected.
10) In the context of statistics, what does **cluster random sampling** refer to?
   (a) A sampling method where every member of the population has an equal chance of being selected.
   (b) A sampling method where the population is divided into groups and a few groups are randomly selected.
   (c) A sampling method where the population is divided into groups and some members from each group are selected.
   (d) A sampling method where the most convenient members of the population are selected.