

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) 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.
- 11) In a **simple random sample**:
 - (a) Every individual has an equal chance of being selected.
 - (b) Only a few individuals have a chance of being selected.

- (c) No individual has a chance of being selected.
 - (d) All individuals are selected.
- 12) What is the purpose of a **sampling frame** in random sampling?
- (a) It provides a list of individuals from which the sample is drawn.
 - (b) It provides a frame for the study.
 - (c) It provides a list of all possible outcomes.
 - (d) It provides a frame for the population.
- 13) What is a **variable** in the context of a statistical study?
- (a) The characteristics observed in a study.
 - (b) The subjects participating in a study.
 - (c) The method used to collect data in a study.
 - (d) The results of a study.
- 14) What does **variability** refer to in statistics?
- (a) The consistency of data in a study.
 - (b) The method used to collect data in a study.
 - (c) The variation among subjects in a study.
 - (d) The number of subjects in a study.