



- a) Studying a single group over an extended period  
 b) Studying multiple groups at one point in time  
 c) Studying multiple groups over an extended period  
 d) Studying a single group at one point in time
- (ix) Which of the following is a non-probability sampling technique?  
 a) Simple random sampling  
 b) Stratified sampling  
 c) Convenience sampling  
 d) Cluster sampling
- (x) Which of the following is an advantage of random sampling?  
 a) It is cost-effective  
 b) It ensures every member of the population has an equal chance of being selected  
 c) It is easy to implement  
 d) It guarantees a representative sample
- (xi) In which sampling technique is every member of the population listed, and a fixed number of individuals are skipped before selecting a sample?  
 a) Systematic sampling  
 b) Convenience sampling  
 c) Purposive sampling  
 d) Simple random sampling
- (xii) What is the purpose of a pilot study in the context of sampling?  
 a) To select the sample for the main study  
 b) To identify potential problems and refine the sampling methods for the main study  
 c) To conduct the main study  
 d) To analyze the data collected in the main study
- (xiii) In hypothesis testing, the null hypothesis ( $H_0$ ) states:  
 a) There is a significant relationship between variables  
 b) There is no relationship between variables  
 c) The study has been proven correct  
 d) The study requires further investigation
- (xiv) Which statistical test is appropriate for comparing means of two independent groups?  
 a) t-test  
 b) Chi-square test  
 c) ANOVA  
 d) Pearson correlation
- (xv) What does a correlation coefficient measure?  
 a) Causation  
 b) Strength and direction of the relationship between two variables  
 c) Standard deviation  
 d) Mean

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**Group-B**  
 (Short Answer Type Questions)

3 x 5=15

2. Define Cross Sectional Study. (3)
3. Define the difference between primary and secondary data. (3)
4. Define random sampling and its Importance. (3)
5. Define systematic sampling, and its difference from simple random sampling. (3)
6. Calculate the mean, median, and mode for the following dataset: 5, 7, 8, 8, 9, 10, 10, 12, 15. (3)

OR

Define convenience sampling and its limitation in research. (3)

**Group-C**  
 (Long Answer Type Questions)

5 x 6=30

7. Explain the situations in which ANOVA is preferable over a t-test and also describe the one-way ANOVA procedure with a suitable example. (5)
8. Discuss the significance of the correlation coefficient ( $r$ ) in correlation analysis and also mention the strength of correlation interpreted based on the value of  $r$ . (5)
9. Describe the role of the p-value in hypothesis testing and indication of a small p-value. (5)
10. Explain why large sample sizes are preferred in statistical studies. (5)

11. Describe the role of interviews in qualitative data collection. (5)
12. Explain the process of observational data collection. (5)
- OR**
- Explain simple, stratified, cluster random sampling. (5)

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**Brainware University**  
**Barasat, Kolkata -700125**