



UGC NET Research Aptitude Questions Answers With Solutions

Q1. Given below are two statements:

Statement I: Truth and falsehood are attributes of individual propositional

Statement II: Validity can be attributed to any single proposition by itself.

In the light of the above statements choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q2. Which of the following refers to a method of sampling in which a core group of participants who are initially sampled for a research study recruit or recommend other potential participants?

- (a) Simple random sampling
- (b) Snowball sampling
- (c) Quota sampling

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(d) Stratified random sampling

Q3. Given below are two statements:

Statement I: The process of deduction involves drawing generalizable inferences out of observations. Statement II: Positivism advocates the application of the methods of the natural sciences to the study of social reality.

In the light of the above statements choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q4. Given below are two statements:

Statement I: According to UGC regulations 2018 on Prevention of Plagiarism, a student is required to give an undertaking while submitting a thesis, stating that the document is his/her original work which is free from any plagiarism.

Statement II: According to UGC Regulations 2018 on Prevention of Plagiarism, the research supervisor is not required to certify that the work done by the research under him/her is plagiarism free.

In the light of the above statements choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct





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Q5. Given below are two statements:

Statement I: Pearson's coefficient of correlation 'r' is a very useful measure of the strength and direction of the relationship between two nominal variables.

Statement II: Pearson's coefficient of correlation 'r' always lies between 0 and 1.

In the light of the above statements choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q6. Identify the threats to the internal validity of an investigation:

- A. History
- **B.** Instrumentation
- C. Maturation

Choose the correct answer from the options given below:

- (a) A and B only
- (b) B and C only
- (c) A and C only
- (d) A, B and C only

Q7. Arrange the following in correct sequence according to APA style of referencing:

- A. Title of the research article
- B. Year of publication
- C. Name of journal
- D. Name author

Choose the correct answer from the options given below:

- (a) A, B, C, D
- (b) A, C, D, B
- (c) D, A, C, B
- (d) D, B, A, C

Q8. If you wish to test whether population mean is lower than some hypothesized value, you would apply:

- (a) one-tailed test
- (b) two-tailed test
- (c) hall- tailed test
- (d) three tailed test

Q9. Identify the software used for detecting plagiarism :

- (A) Mendley
- (B) Turnitin
- (C) Compiler
- (D) Ithenticate





Choose the correct answer from the options given below :

(a) (A) and (B) Only

(b) (A), (B) and (C) Only

(c) (A), (B) and (D) Only

(d) (B) and (D) Only

Q10. Which of the following correctly represents the meaning of the abbreviation Ante used in academic writing?

- (a) anonymous
- (b) before
- (c) after
- (d) and other

Q11. Which among the following is concerned with the question of whether social scientific findings are applicable to people's everyday natural social setting?

- (a) Ecological validity
- (b) External validity
- (c) Measurement validity
- (d) Face validity

Q12. Below are two statements:

Statement I: The concept of validity canno<mark>t be applied to single</mark> propositions.

Statement II: The concept of truth cannot be applied to arguments.

Based on the above statements, select the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct.
- (b) Both Statement I and Statement II are incorrect.
- (c) Statement I is correct, but Statement II is incorrect.
- (d) Statement I is incorrect, but Statement II is correct.

Q13. Knowledge is obtained through the collection of facts that provide a basis for theory. This relates to the following principle:

- (a) Empiricism
- (b) Positivism
- (c) Deductionism
- (d) Constructivism

Q14. Identify non-probability samples from the following:

- A. Simple random sample
- B. Quota sample
- C. Systematic sample
- D. Snowball sample



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Choose the correct answer from the options given below:

(a) B, C and D only

(b) C and D only

(c) A, B and C only

(d) B and D only

Q15. Which of the following sections of a research report are not considered for checking similarity when detecting plagiarism ?

A. Abstract

B. All generic terms, laws

- C. Observations (Findings)
- D. conclusions

E. Bibliography

Select the correct answer from the options given below:

(a) Only A, B, C, and D

(b) Only B and E

(c) Only E

(d) Only C, D, and E

Q16. Below are two statements:

Statement I: Spearman's rho (ρ) is commonly used to measure the strength and direction of the association between two ordinal variables.

Statement II: Pearson's correlation coefficient 'r' is quite useful when the relationship between two variables is curvilinear.

Based on the above statements, select the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct.
- (b) Both Statement I and Statement II are incorrect.

(c) Statement I is correct, but Statement II is incorrect.

(d) Statement I is incorrect, but Statement II is correct.



Q17. Match List –I with List –II





Choose the correct answer from the options given below:
(a) A-II, B-IV, C-I, D-III
(b) A-IV, B-I, C-II, D-III
(c) A-III, B-I, C-II, D-IV
(d) A-III, B-IV, C-I, D-II

Q18. According to UGC regulations 2018 on plagiarism, level 3 plagiarism refers to similarities

- (a) above 60%
- (b) below 10%
- (c) above 10% to 30%
- (d) above 40% to 60%

Q19. Identify the characteristics of open ended questions in survey research:

- A. The questions suggest certain kinds of answer to the respondents.
- B. They are useful for exploring new areas.
- C. They are time consuming for interviewers to administer.

Choose the correct answer from the options given below:

- (a) A and B only
- (b) B and C only
- (c) A and C only
- (d) A, B and C only

Q20. Given below are two statements:

Statement I: In a reference written in APA style, the first name of an author is written first.

Statement II: In a reference written in APA style, the year of the publication is written after the page number.

- In light of the above statements, choose the most appropriate answer from the options given below.
- (a) Both Statement I and Statement II are true
- (b) Both Statement I and Statement II are false.
- (c) Statement I is true but Statement II is false.
- (d) Statement I is false Statement II is true.

Q21. Which among the following types of variables can NOT be rank ordered?

- (a) nominal
- (b) ordinal
- (c) interval
- (d) ratio





- **Q22.** Identify the advantages of close-ended questions in survey research:
- A. They allow unusual responses to be derived.
- B. It is easy to process their answers.
- C. They reduce the possibility of variability in the recording of answer.

Choose the correct answer from the options given below:

- (a) A and B only
- (b) B and C only
- (c) A and c only
- (d) A, B and C

Q23. A researcher givens the following options to a respondent while asking a question during a survey. Identify the options which suffer from ambiguity:

- A. Very often
- B. Quite often
- C. Not very often
- D. Not at all
- Choose the correct answer from the options given below:
- (a) A, B and C only
- (b) B, C and D only
- (c) A, C and D only
- (d) A, B, C and D

Q24. Identify the measures of dispersion:

- A. Range
- B. Quartile deviation
- C. Sum of the deviations about mean
- D. Standard deviation
- Choose the correct answer from the options given below:
- (a) A, B and C only
- (b) B, C and D only
- (c) A, B and D only
- (d) A, C and D only

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Q25. When two variable are related in such a way that when one increases, so does the other, you can conclude that;

- (a) There is no problem with directionality.
- (b) The two variables are positively associated.
- (c) There are no latent variables affecting the relationship.
- (d) There is a third variable responsible for the causation between them.





- **Q26.** Identify the advantages of content analysis:
- A. It is a vary transparent research method.
- B. It is often referred to favourably as an unobtrusive method.
- C. It is a highly flexible method.
- Choose the correct answer from the options given below:
- (a) A and B only
- (b) B and C only
- (c) A and C only
- (d) A, B and C

Q27. When a research problem is related to heterogeneous population, the most suitable sampling method is?

- (a) Cluster sampling
- (b) Stratified Sampling
- (c) Snowball sampling
- (d) Quata sampling

Q28. Identify the correct reasons for writing a literature review:

- A. You need to know what is already known in connection with your research area.
- B. It many help you to develop an analytic framework.
- C. It will help with the interpretation of your findings.
- D. It many suggest further research questions for you.

Choose the correct answer from the options given below:

- (a) A and B Only
- (b) B, C and D only
- (c) A, C and D only
- (d) A, B, C and D

Q29. Which among the following is an open source software for data analysis?

- (a) SPSS
- (b) MATLAB
- (c) R
- (d) MINITAB

Q30. Identify the similarities between quantitative and qualitative research:

- A. Both are concerned with data reduction.
- B. Both are concerned with variation in data.
- C. Both lay emphasis on contextual understanding.
- D. Both lay emphasis on generalization.

E. Both are concerned with answering research questions.





Choose the correct answer from the options given below: (a) A and D Only (b) A, B, D and E Only

(c) B, D and E Only

(d) A, B and E only

Q31. An epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyond, refers to:

- (a) Positivism
- (b) Interpretivism
- (c) Objectivism
- (d) Constructionism

Q32. The systematic elimination of extraneous variables, other than those you are interested in, can be done in which of the following types of research?

- (a) Qualitative research
- (b) Longitudinal research
- (c) Experimental research
- (d) Correlational research

Q33. When the age of the researcher affects the behaviour of the study participants, it is called:

- (a) Sociological Effect
- (b) Biosocial Effect
- (c) Psychological Effect
- (d) Psychosocial Effect

Q34. In a negatively skewed distribution, which among the following would be true?

- (A) Mean > Mode
- (B) Mean < Median
- (C) Median < Mode
- (D) Mode > Mean

Choose the correct answer from the options given below:

- (a) (A) and (B) Only
- (b) (B) and (C) Only
- (c) (B) and (D) Only
- (d) (A) and (C) Only

Q35. Identify the correct sequence of steps involved in conducting a literature review for a research study:

- (A) Locate literature
- (B) Organize the literature
- (C) Identify key terms for search
- (D) Write a literature review
- (E) Critically evaluate and select the literature relevant to research





Choose the correct answer from the options given below:

(a) (A), (B), (C), (E), (D)
(b) (A), (C), (B), (E), (D)
(c) (C), (A), (E), (B), (D)
(d) (C), (E), (A), (B), (D)

Q36. For which of the following p-value of a test statistic, a null hypothesis is likely to be rejected?

A. 0.38 of 2%

B. 38%

C. 2%

D. 0.46%

Choose the correct answer from the options given below:

- (a) A and B Only
- (b) A and C Only
- (c) B and C Only
- (d) B and D Only

Q37. Statement I: According to the UGC Regulations on Plagiarism, **2018**, the authorities of higher education institutions cannot take cognizance of acts of plagiarism on their own.

Statement II: Plagiarism refers to the practice of taking someone else's work or ideas and presenting them as one's own.

In light of the above statements, choose the correct answer from the options given below:

- (a) Both Statement I and II are true
- (b) Both Statement I and II are false
- (c) Statement I is true, but Statement II is false
- (d) Statement I is false, but Statement II is true

Q38. Given below are two statements:

Statement I: In Cross-Sectional research, a researcher studies the same population over time.

Statement II: In retrospective study, a researcher relies on people's memories and recollections of the past.

In light of the above statements, choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are true.
- (b) Both Statement I and Statement II are false.
- (c) Statement I is true but Statement II is false.
- (d) Statement I is false but Statement II is true.

Q39. In naturalistic observation, the practice of dichotomous recording whether a behavior occurs not, constitutes

- (a) Cluster sampling
- (b) Time-interval sampling
- (c) One/zero sampling

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(d) Continuous real-time sampling





Q40. When researchers use designs that call for multiple groups, the most commonly employed test is (a) Z-test

- (b) t-test for difference of means
- (c) paired t-test
- (d) F-test

Q41. Which among the following is NOT advantage of open ended questions in survey research?

- (a) They are useful for explaining areas in which researcher has limited knowledge.
- (b) Respondents can answer in their own terms.
- (c) They allow unusual Reponses to be derived.
- (d) They are easy for the interviewers and or respondents to complete.

Q42. The reference section of a research article in written in APA style. Arrange the information pertaining a reference in the correct order

- A. Page number
- B. Year of publication
- C. Name of author
- D. Title of the article
- Choose the correct answer from the options given below:
- (a) A, B, C, D
- (b) C, A, B, D
- (c) D, C, B, A
- (d) C, B, D, A

Q43. Identify the measures of central tendency

- A. Arithmatic mean
- B. Median
- C. Range
- D. Mode
- E. Second decile
- Choose the correct answer from the options given below:
- (a) A, B and C only
- (b) A, B and D only
- (c) A, B, D and E only
- (d) A, B, C, D and E only

Q44. Which aspect of the researcher may cause psychosocial effect in the participant of a study?

- (a) Age
- (b) Race
- (c) Sex
- (d) Attitude

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Q45. A researcher obtains the following p-values for sample correlation coefficients of different samples. Which of these can be considered significant at 1% level significance?

- A. 0.004 B. 0.99
- C. 0.995
- D. 0.001
- E. 0.1

Choose the correct answer from the options given below:

- (a) B and C only
- (b) B, D and E only
- (c) A and D only
- (d) B, C and E only

Q46. Which among the following would be that ethical issues in a research study that involves participation of human subjects?

- A. Lack of informed consent
- B. Physical and psychological harm
- C. Excessive inducements
- D. Debriefing
- Choose the correct answer from the option given below:
- (a) A, B and C only
- (b) B, C and D only
- (c) A, C and D only
- (d) A, B, C and D

Q47. Given below are two statement s:

Statement I: The standard deviation of a series of repeated measurements estimates the likely size of the chance error in a single measurement.

Statement II: Bias affects all the measurements the same way, pushing them in the same direction.

In the light of the above statements, choose answer from the options given below:

- (a) Both Statement I and Statement II are true
- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true

Q48. Given below are two statement s:

Statement I: In a ratio scale, zero point is arbitrary

Statement II: The nominal scale allows ordering/ranging of data

In the light of the above statements, choose answer from the options given below:

(a) Both Statement I and Statement II are true

- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false

(d) Statement I is false but Statement II is true





Q49. The questions of whether a measure that is devised for a concept really does reflect the concept that it is supposed to be denoting, relates to

- (a) Measurement validity
- (b) Ecological validity
- (c) Internal validity
- (d) External validity

Q50. According to the UGC Regulations, 2018 on plagiarism similarity of 42% refers to which of the following levels of plagiarism?

- (a) 0
- (b) 1
- (c) 2
- (d) 3

Q51. Among the following types of sampling techniques, which one is also known as 'Judgmental' sampling?

- (a) Quota sampling
- (b) Convenience Sampling
- (c) Cluster Sampling
- (d) Purposive Sampling

Q52. Given below are two statements:

Statement I: The risk of rejecting the null hypothesis when it should be confirmed, is more at 0.5 p-level than at 0.01 p-level

Statement II: The risk of committing a type- I error is lower at 0.05 p-level than at 0.01 p-level

In the light of the above statements, choose the correct answer from the options given below.

(a) Both Statement I and Statement II are true

- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true

Q53. Given below are two statements:

Statement I: A Cohort is a population whose members have some specific characteristics in common. Statement II: In a prospective study, the researcher relies on people's memories and recollections of the past.

In the light of the above statements, choose the correct answer from the options given below.

- (a) Both Statement I and Statement II are true
- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true





Q54. Given below are two statements:

Statement I: A dichotomous variable is the one which has more than two categories.

Statement II: A nominal variable can have more than two categories.

In the light of the above statements, choose the correct answer from the options given below.

(a) Both Statement I and Statement II are true

(b) Both Statement I and Statement II are false

(c) Statement I is true but Statement II is false

(d) Statement I is false but Statement II is true

Q55. According to UGC Regulations 2018 on plagiarism, common knowledge or coincidental terms, up to how many consecutive words shall be excluded while checking similarity for detection of plagiarism

(a) 8

(b) 12

(c) 14

(d) 18

Q56. When participants drop out of a study, leading to change in the nature of the sample. It would cause which of the following threats to internal validity?

- (a) Selection threat
- (b) Attrition threat
- (c) History threat
- (d) Testing threat

Q57. Given below are two statements:

Statement I: In observational research. the variables are actively manipulated and the environment is as controlled as possible.

Statement II: Observational research allows you to eliminate the influence of many extraneous factors. In the light of the above statements, choose the correct answer from the options given below

- (a) Both Statement 1 and Statement II are true
- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement 1 is false but Statement IT is true

Q58. When the researcher's sex affects the behaviour of a participant in a study, it refers to

- (a) Psychosocial Effect
- (b) Psychological Effect
- (c) Biosocial Effect
- (d) Environmental Effect

Q59. Which of the following p-values would signify that a sample correlation coefficient is significant at 1% level of significance?

(a) 0.005

(b) 0.02

(c) 0.99

(d) 0.95





Q60. Arrange the following scales of measurement from the simplest to the most evolved.

- A. Ordinal
- B. Nominal
- C. Ratio
- D. Interval

Choose the correct answer from the options given below:

- (a) A, B, C, D
- (b) B, C, A, D
- (c) C, D, B, A
- (d) B, A, D, C

Q61. When studies on a given topic lead to similar conclusions, the measurements show

- (a) Convergent Validity
- (b) Criterion Validity
- (c) Divergent Validity
- (d) Construct Validity

Q62. Given below are two statements:

Statement I: The purpose of a blind study is to prevent the participants from figuring out what the experimental wants.

Statement II: Interaction between the experimenter and the participants is always beneficial in social science research.

In the light of the above statements, choose the correct answer from the options given below

- (a) Both statement I and statement II are true
- (b) Both statement I and statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true

Q63. Given below are two statements: one is labelled as Assertion A and other is labelled as Reason R Assertion A: Experimental research allows you to eliminate the influence of many extraneous factors. **Reason R:** In experimental research variable are actively manipulated and environment is as controlled as possible

In the light of the above statements, choose the correct answer from the options given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true and R is NOT the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true

Q64. The property of data such that research results apply to situations beyond the particular sample of individuals/items observed in a single research setting, refers to

- (a) Internal Validity
- (b) Convergent Validity
- (c) Divergent Validity
- (d) External Validity





- **Q65.** Arrange the following steps involved in a research process in correct order
- A. Collecting the data
- B. Reviewing the literature
- C. Reporting the research outcome
- D. Identifying a research problem
- E. Analyzing and interpreting the data

Choose the correct answer from the options given below:

- (a) A, D, B, E, C
- (b) D, A, B, C, E
- (c) B, D, A, E, C
- (d) D, B, A, E, C

Q66. If you want to conclude that a given variable has a causal relation with a second variable, you have to be able to rule out other possible causal variables. The principle of causation involved here is the-

- (a) Causal ambiguity rule
- (b) Temporal precedence rule
- (c) Covariance rule
- (d) Internal validity rule

Q67. Given below are two statements:

Statement I: Content analysis is an approach to the analysis of documents and texts that seeks to analyze them in qualitative terms.

Statements II: Content analysis is very transparent research method.

In the light of the above statements, choose the correct answer from the options given below:

- (a) Both Statement I and Statement II are true
- (b) Both Statement II and Statement II are false
- (c) Statement I is true but Statement II are false
- (d) Statement I is false but Statement II is true

Q68. Fundamental research reflects the ability to?

- (a) Study the existing literature regarding various topics
- (b) Expound new principles
- (c) Evaluated the existing material concerning research
- (d) All of the above

Q69. Which of the following diagrams would be useful in depicting the median value in the data?

- (a) Bar chart
- (b) Box plot
- (c) Pie chart
- (d) Scatter plot







Q70. Given below are two statements:

Statement I: Review of literature helps the researcher with the interpretation of his/her findings.

Statement II: Review of literature is not of any help in learning different theoretical and methodological approached to your research area.

In the light of the above statements, choose the correct answer from the options given below:

- (a) Both Statement I and Statement II are true
- (b) Both Statement II and Statement II are false
- (c) Statement I is true but Statement II are false
- (d) Statement I is false but Statement II is true

Q71. Identify the disadvantages of closed ended questions in survey research

- A. It is difficult to make forced- choice answers exhaustive.
- B. There is loss of spontaneity in respondent's answers.

C. They are time consuming for interviewers to administer.

Choose the correct answer from the option below:

(a) A and B only

(b) B and C only

- (c) A and C only
- (d) A, B and C

Q72. In which of the following sampling methods, the sample is also known as an accidental sample and a haphazard sample?

- (a) Purposive sampling
- (b) Quota sampling
- (c) Stratified random sampling
- (d) Convenience sampling

Q73. The term 'Correlation' in mass communication refers to the function of

- (a) Information gathering
- (b) Socialization
- (c) Interpretation
- (d) Investigation

Q74. Which among the following is NOT a characteristic of the closed ended questions in survey research?

- (a) They allow unusual responses that the survey researcher may not have contemplated.
- (b) They are easy for interviewers and/or respondents to complete.
- (c) They reduce the possibility of variability in the recording of answers.
- (d) There is loss of spontaneity in respondents answers.

Q75. Arrange the following steps pertaining to quantitative research in correct order:

- A. Analyze data
- B. Hypothesis
- C. Process data
- D. Findings
- E. Research Design





Choose the correct answer from the options given below:

(a) B, C, D, E, A

(b) B, E, C, A, D

(c) C, D, A, B, E

(d) E, B, C, A, D

Q76. The graphical representation of a frequency distribution is called

- (a) Bar chart
- (b) Line chart
- (c) Histogram
- (d) Pie chart

Q77. The question of whether the results of a study can be generalized beyond the specific research context, relates to

- (a) Measurement validity
- (b) Internal validity
- (c) External validity
- (d) Ecological validity

Q78. Given below are two statements:

Statement I: A dependent variable can never be dichotomous.

Statement II: An independent variable is always dichotomous.

In the light of the above statement, choose the most appropriate answer from the options given below.

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q79. Which of the following terms is used to describe human communication behavior related to personal space?

- (a) Contextuality
- (b) Referentiality
- (c) Confidentiality
- (d) Territoriality

Q80. In studies involving human subjects, there could be short or long term changes in participants because of psychological changes like boredom and fatigue. This would constitute which of the following threats to internal validity?

- (a) Maturation threat
- (b) History threat
- (c) Selection threat
- (d) Instrumentation threat



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Q81. The study of the behavior of humans and non humans in the natural environment without any manipulation of variables is called

- (a) Quasi-experimental research
- (b) Observational research
- (c) Subjective research
- (d) Anthropometric research

Q82. A statistical test that permits assessment of possible significance of difference across mean of multiple group, is

- (a) Student's t-test
- (b) Analysis of variance
- (c) Paired t-test
- (d) Chi-square test

Q83. In the submission of thesis, if a student is found to commit plagiarism of level 3 as per UGC Regulations 2018 on Plagiarism. The following penalty will be imposed-

- (a) Student shall be debarred from submitting the revised thesis for a of one year
- (b) Student's registration for the programme shall be cancelled
- (c) Student shall be debarred from submitting the revised thesis for 6 months
- (d) Students shall be asked to submit the revised thesis within 6 months

Q84. Given below are two statements:

Statement I: When selection procedure is biased, taking a large sample will help reduce the bias.

Statement II: In a normally distributed data, the chances of individual observed values deviating more than 3 times the standard deviation from the mean value, are very less.

In the light of the above statements, choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are correct
- (b) Both Statement I and Statement II are incorrect
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q85. Given below are two statements:

Statement I: The p-value of a test depends on sample size.

Statement II: An important difference may not be statistically significant if the sample size is too small.

In the light of the above statements, choose the most appropriate answer from the options given below:

- (a) Both Statement I and Statement II are true
- (b) Both Statement I and Statement II are false
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true





Q86. Which among the following is NOT a type of Longitudinal Research?

- (a) Cross-sectional study
- (b) Trend study
- (c) Prospective study
- (d) Cohort study

Q87. Given below are two statements:

Statement I: Gaining access to a public of social setting is an important issue in ethnographic research Statement II: There is no distinction between overt and covert ethnography in terms of access and participation

- In the light of the above statements, choose the most appropriate answer from the options given below:
- (a) Both Statement I and Statement II are true.
- (b) Both Statement I and Statement II are false.
- (c) Statement I is true but Statement II is false.
- (d) Statement I is false but Statement II is true.

Q88. One of the characteristics of probability sampling is

- (a) Population bias
- (b) Sampling bias
- (c) Random selection
- (d) Accidental selection

Q89. Which of the following are characteristics of qualitative interview?

- A. it is less structured.
- B. it reflects researcher's concerns.
- C. The interview is al<mark>lowed to</mark> ramble.
- D. The interview has standardized questions.
- E. it is flexible in approach

Choose the most appropriate answer from the questions given below:

- (a) A, B, C only
- (b) B, C and D only
- (c) C, D and E only
- (d) A, C and E only

Q90. Which of the following factors must be taken into account quantitative research?

- A. Measurement
- B. Causality
- C. Replication
- D. Exclusion of statistical analysis
- E. Less importance to standardization





Choose the most appropriate answer from the questions given below:

- (a) A, B and C only
- (b) B, C and D only
- (c) C, D and E only
- (d) A, C and D only
- Q91 Covert research in ethnography is beset with
- (a) Person issues
- (b) Ethical issues
- (c) Political issues
- (d) Historical issues

Q92. Application of ICT in research is relevant in which of the following stages?

- (i) Survey of related studies
- (ii) Data collection in the field
- (iii) Data analysis
- (iv) Writing the Thesis
- (v) Indexing the references
- Choose the most appropriate option from those given below
- (a) II, IV, and V
- (b) I, III, and V
- (c) I, II, and IV
- (d) I, III, and IV

Q93. When a researcher rejects the "Null Hypothesis' (Ho) in his/her study and concepts an alternate Hypothesis (H1), What type of error is likely?

- (a) Type I error
- (b) Type II error
- (c) Both Type I and Type II error
- (d) Neither Type I nor Type II error

Q94. Which of the following is an advantage of online surveys in survey research?

- (a) They allow for greater control over the survey environment
- (b) They have higher response rates than other survey methods
- (c) They are less susceptible to response bias
- (d) They can be completed quickly and easily by respondents

Q95. What is the purpose of hypothesis testing in hypothetico-deductive research?

- (a) To generate new theories
- (b) To validate research participants' experiences
- (c) To gather qualitative data for analysis
- (d) To evaluate the accuracy of the proposed hypotheses

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- **Q96.** What is the role of reflection in action research?
- (a) Identifying research participants
- (b) Analyzing quantitative data
- (c) Assessing the effectiveness of interventions
- (d) Developing research questions

Q97. An extraneous variable is also known as-

- (a) Artifact
- (b) Contiguous factor
- (c) Dependent variable
- (d) Intervener

Q98. Independent verification of a research effort is known as-

- (a) enquiry
- (b) investigation
- (c) probe
- (d) replication

Q99. Sometimes, subjects who know that they are in a control group may work hard to excel against the experimental group. Such a phenomenon is known as-

- (a) compensatory rivalry
- (b) controlled competition
- (c) inspirational influence
- (d) motivational contest

Q100. What is the name of the score the student would get if the measurements were completely accurate

- and error-free?
- (a) I-score
- (b) Neutral score
- (c) True score
- (d) Z-score

SOLUTIONS

S1. Ans.(c)

Sol. Statement I is correct as truth and falsehood indeed are attributes of individual propositions; a proposition is a statement that is either true or false.

Statement II, however, is incorrect. Validity, in the context of logic, is a property of arguments where an argument is valid if the conclusion logically follows from the premises.

Validity cannot be attributed to a single proposition but rather to the relationship between premises and conclusion in an argument.





Information Booster:

Statement II (Option d): The incorrectness of Statement II stems from the misunderstanding of Validity does not concern the truth content of individual statements but whether the logical form of the argument prevents a false conclusion if the premises are true.

Option a and b: Both options are incorrect as they either assert both statements are true or both are false, respectively. As explained, only Statement I accurately reflects a correct understanding of propositional attributes.

S2. Ans.(b)

Sol. Snowball sampling is a non-probability sampling technique used in research where existing study subjects recruit future subjects from among their acquaintances. This method is particularly useful for studies involving populations that are difficult to access or identify, such as specific subcultures, populations with rare characteristics, or sensitive topics. Snowball sampling relies on the initial subjects to nominate or recommend additional participants, thus, the sample size grows like a snowball rolling down a hill, hence the name.

Simple random sampling (Option a) is a probability sampling method where every member of the population has an equal chance of being selected. It requires a comprehensive list of all population members to ensure the randomness of the selection.

Quota sampling (Option c) is a non-probability sampling technique where the researcher fills quotas from different subgroups of the population. The selection within these subgroups is not random.

Stratified random sampling (Option d) is a probability sampling method that involves dividing the population into smaller subgroups, or strata, based on shared characteristics and then randomly sampling from each stratum. This method ensures representation from all parts of the population.

Therefore, the correct answer is (b) Snowball sampling, as it specifically refers to a method where initial participants help

S3. Ans.(d)

Sol. Statement I describes the process of deduction incorrectly. Deduction involves starting with a general theory or hypothesis and then moving towards more specific observations to confirm the theory. In other words, it goes from the general to the specific, rather than drawing generalizable inferences from observations.

The process described in Statement I more closely resembles induction, which involves making generalizable inferences from specific observations.

Statement II correctly describes positivism. Positivism is an epistemological position that indeed advocates for the application of the methods of the natural sciences to the study of social reality. This approach emphasizes the importance of observation, objectivity, and the search for laws that can explain social phenomena, mirroring the methodological principles used in the natural sciences.

Given this analysis, Statement I is incorrect because it confuses deduction with induction, and Statement II is correct as it accurately represents the positivist approach to social science research.





S4. Ans.(c)

Sol. Statement I is accurate according to the UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. These regulations mandate that students, while submitting a thesis, dissertation, term papers, reports, or any other such academic works, must include an undertaking indicating that the work submitted is their own and is free from any form of plagiarism. This requirement is a part of the efforts to maintain academic integrity and to ensure that all submitted academic works adhere to standards of originality.

Statement II is incorrect. The UGC regulations also place a responsibility on the research supervisors to ensure the academic integrity of the works submitted by their students or research scholars. Supervisors are required to certify that the work conducted under their guidance is plagiarism-free to the best of their knowledge. This certification process is integral to promoting a culture of honesty and integrity in academic research and to the process of vetting academic works for plagiarism before their final submission.

Therefore, the correct answer is (c) Statement I is correct but Statement II is incorrect, reflecting the actual stipulations of the UGC regulations regarding the prevention of plagiarism in academic research and submissions.

S5. Ans.(b)

Sol. Statement I is incorrect because Pearson's coefficient of correlation, denoted as 'r', is not used to measure the relationship between two nominal variables. Pearson's r is designed to quantify the strength and direction of the linear relationship between two continuous or interval variables. Nominal variables, which represent categories without inherent order, are not suited for analysis with Pearson's r. Other statistical measures, like the Chi-square test, are more appropriate for nominal data.

Statement II is also incorrect. Pearson's coefficient of correlation 'r' does not always lie between 0 and 1.

Instead, it ranges from -1 to +1. The value of 'r' indicates the strength and direction of a linear relationship between two variables. A value of +1 indicates a perfect positive linear relationship, -1 indicates a perfect negative linear relationship, between the variables.

Given the inaccuracies in both statements, the correct answer is (b) Both Statement I and Statement II are incorrect.

S6. Ans.(d)

Sol. Internal validity refers to the extent to which a causal conclusion based on a study is warranted, which is determined by the study's methodological rigor and execution. The threats to internal validity specifically concern factors that may lead to incorrect inferences about causal relationships within the study.

A. History: Refers to external events that occur during the study that could affect participants' responses independently of the treatment effect. For example, a significant news event could influence the mood or attitudes of participants, thereby affecting the study outcomes.

B. Instrumentation: Involves changes in measurement instruments (such as questionnaires or equipment) or observers that could lead to differences in measurement. This could be due to alterations in the measurement process itself or changes in observers' calibration over time.





C. Maturation: Refers to processes within the participants that operate as a function of time per se (not specific to particular events) and may affect their behavior or responses. These include natural growth, fatigue, hunger, etc., that occur during the study. All these factors—history, instrumentation, and maturation—can potentially influence the outcomes of an investigation, thus posing threats to its internal validity. They represent changes that may confound the results, making it difficult to attribute any effects observed solely to the variables under study.

Therefore, the correct answer is (d) A, B, and C only, as all three listed factors are recognized threats to the internal validity of a research study.

S7. Ans.(d)

Sol. According to APA style of referencing, the correct sequence for listing a journal article is as follows: (d) D, B, A, C. The name of the author (D), the year of publication (B), the title of the research article (A), and the name of the journal (C). This sequence ensures a standardized format that allows readers to easily locate and reference the source material. For example, a proper APA citation for a journal article would look like this: Author, A. A. (Year). Title of the research article. Name of the Journal, volume number(issue number), page range.

Information Booster

Title of the research article: (a) The title of the research article is included in the citation to specify the exact work being referenced. In APA style, it is typically written in sentence case (only the first word and proper nouns are capitalized).

Year of publication: (b) The year of publication is placed in parentheses immediately after the author's name to indicate when the research was published.

Name of journal: (c) The name of the journal is italicized in the citation and capitalized in title case (major words capitalized). It follows the title of the article.

Name of author: (d) The name of the author is listed first in the citation. The format includes the last name followed by the initials of the first and middle names (if available).

S8. Ans.(a)

24

Sol. To test whether the population mean is lower than a hypothesized value, you would use a one-tailed test. In hypothesis testing, a one-tailed test is used when the research hypothesis predicts a specific direction of the effect (either less than or greater than a certain value). In this case, the null hypothesis (H_0) might state that the population mean is equal to or greater than the hypothesized value, while the alternative hypothesis (H_1) would state that the population mean is less than the hypothesized value. By using a one-tailed test, you focus on the probability of observing data in one direction, which increases the test's power to detect an effect in that direction.

Information Booster

Two-tailed test: (b) A two-tailed test is used when the research hypothesis does not predict the direction of the effect, only that there is an effect (i.e., the population mean is different from the hypothesized value). It tests for deviations in both directions (greater than or less than).

Hall-tailed test: (c) There is no such statistical test known as a hall-tailed test. This option is incorrect. Three-tailed test: (d) There is no such statistical test known as a three-tailed test. This option is also incorrect.





S9. Ans.(d)

Sol. The software used for detecting plagiarism are Turnitin and iThenticate (d) (B) and (D) Only. Turnitin is widely used in educational institutions to check for originality in student papers and assignments. It compares submitted documents against a vast database of academic work and internet sources to identify potential plagiarism. iThenticate, on the other hand, is used primarily by researchers, publishers, and institutions to check the originality of research papers and manuscripts before publication. It is known for its extensive database and thoroughness in detecting similarities and potential plagiarism. Information Booster

Mendeley: (A) Mendeley is a reference manager and academic social network that helps organize research, collaborate with others online, and discover the latest research. It is not designed for plagiarism detection. Compiler: (C) A compiler is a software that translates computer code written in one programming language into another language, typically machine code that can be executed by a computer's processor. It is not related to plagiarism detection.

S10. Ans.(b)

Sol. The abbreviation "ante" is derived from Latin and means "before." It is often used in academic writing to refer to something that precedes another in time or order. For example, "antebellum" refers to the period before a war, typically the American Civil War. In referencing, "ante" may be used to indicate prior works or events relative to the subject being discussed.

Information Booster

Anonymous: (a) This term is used to describe something or someone whose identity is unknown or not revealed. It is often abbreviated as "anon." in academic citations.

After: (c) The Latin term for "after" is "post." It is used to denote something occurring later in time or sequence, such as "postgraduate" referring to studies pursued after earning a bachelor's degree.

And other: (d) The abbreviation "et al." (from Latin "et alia") is used in academic writing to indicate "and others." It is commonly used in citations when referring to a work with multiple authors.

S11. Ans.(a)

Sol. Ecological validity is the term used to describe whether the findings of a study are applicable to or can be generalized to real-life settings. It assesses the extent to which the results of research can be applied to everyday situations outside of the controlled experimental environment. This type of validity is particularly important in social science research, where understanding how findings relate to real-world social dynamics is crucial.

External validity (b) refers to the extent to which the results of a study can be generalized or applied to other contexts, populations, or situations beyond the study itself. While related, ecological validity is more specifically about the applicability to natural social settings.

Measurement validity (c), also known as construct validity, concerns whether a tool or instrument accurately measures what it is intended to measure.

Face validity (d) is the most basic form of validity, where the measure appears "on its face" to be measuring the intended construct, but this does not necessarily indicate true validity.

Given the focus on applicability to people's everyday natural social settings, the correct answer is (a) Ecological validity.





S12. Ans.(a)

Sol. Both Statement I and Statement II are correct.

Statement I is correct; validity is a term that applies to arguments, not to single propositions. Validity in logic refers to whether an argument's conclusion logically follows from its premises, regardless of the truth of the premises themselves. It is a property of the logical structure of the argument rather than of any individual statement within the argument.

Statement II is correct; the concept of truth applies to individual propositions within an argument, not to the argument as a whole. An argument is evaluated based on its validity and soundness, not its truth. Soundness is a quality where an argument is both valid and all its premises are true, leading to a true conclusion. However, "truth" as a standalone concept does not apply to the structure of the argument itself, but to the propositions it includes.

Information Booster:

Validity focuses on the form and logical consistency of an argument, ensuring that if the premises are true, the conclusion must necessarily be true.

Truth pertains to propositions or statements, evaluated based on their accordance with reality or facts. An argument containing true premises can still be invalid if the logic does not follow correctly. Conversely, an argument can be valid with false premises if the logical structure correctly implies the conclusion.

S13. Ans.(b)

Sol. The correct answer is (b).

(a) Empiricism is a philosophical viewpoint according to which all knowledge comes from sensory experience. It emphasizes the role of experience and evidence, especially sensory perception, in the formation of ideas, over the notion of innate ideas or traditions. Empiricists believe that the best way to understand the world is to observe it directly, and that theories and concepts need to be grounded in observable facts that can be tested through experience and experimentation.

(b) Positivism is a philosophical theory stating that certain ("positive") knowledge is based on natural phenomena and their properties and relations. While it emphasizes empirical data and scientific methods, it is more focused on the use of science as a way to gain knowledge about the world, rather than the sensory experience itself.

(c) Deductionism refers to the logical process of deducing hypotheses and theories from general principles. It is more about reasoning from the general to the specific, which is somewhat opposite to the empirical approach that builds general principles from specific observations.

(d) Constructivism suggests that knowledge is constructed rather than discovered. It posits that learners actively construct their own understanding and knowledge of the world, through experiences and reflecting on those experiences.

S14. Ans.(d)

Sol. In sampling techniques, non-probability sampling methods do not give all the individuals in the population equal chances of being selected. Instead, these methods rely on subjective judgement, convenience, or other non-random processes. Let's analyze the options:

A. Simple random sample: This is a probability sampling method where each member of the population has an equal chance of being selected.





B. Quota sample: This is a non-probability sampling method where the researcher selects individuals to meet a specific quota or characteristic, based on demographic or other relevant criteria, without giving each member of the population an equal chance of being selected.

C. Systematic sample: Although systematic sampling involves a systematic approach to selection (e.g., every nth individual is selected), it starts from a random point. It is considered a probability sampling method, despite its systematic approach.

D. Snowball sample: This is a non-probability sampling method often used in qualitative research where existing study subjects recruit future subjects from among their acquaintances. This method is particularly useful for accessing hard-to-reach or specialized populations but does not give every individual an equal chance of being selected.

Given this, the non-probability samples from the options provided are B (Quota sample) and D (Snowball sample), making the correct answer (d) B and D only.

S15. Ans.(b)

Sol. In the context of checking for plagiarism in a research report, certain sections might be scrutinized less than others because they inherently contain standardized or widely used phrases, terminology, or references that are common across many documents. However, the provided options seem to include a mistake as there is no "E" option listed among the initial choices but is mentioned in the multiple-choice answers. Given the options A through D:

A. Abstract: Typically checked for plagiarism because it is a summary of the research work and should be original.

B. All common words, rules: This might refer to standard phrases or disciplinary-specific terminology that could be excluded from plagiarism checks because they are commonly used across many papers.

C. Observations (Findings) and D. Conclusions: These are core parts of original research and are checked for plagiarism to ensure the originality of the research findings and conclusions drawn.

E. Bibliography: Often not considered for plagiarism checks in the same way as the main text, because it lists sources that are expected to be common among various works. However, the correct citation and usage of these sources are crucial to avoid plagiarism.

Considering the explanations and the mistake in the provided multiple-choice answers, the most fitting response to the question as it was likely intended is: (b) Only B and E.

S16. Ans.(c)

Sol. The correct answer is (c) Statement I is correct, but Statement II is incorrect.

Statement I: Correct. Spearman's rho (ρ) is indeed commonly used to measure the strength and direction of the association between two ordinal variables. Spearman's rank correlation coefficient is a non-parametric measure of correlation, meaning it does not assume a normal distribution of the variables. It assesses how well the relationship between two variables can be described using a monotonic function.

Statement II: Incorrect. Pearson's correlation coefficient 'r' is used to measure the strength and direction of the linear relationship between two continuous variables. It is not suitable for identifying curvilinear relationships. If the relationship between the variables is curvilinear, Pearson's 'r' may not accurately reflect the strength of the relationship. Other methods or types of analysis are better suited for curvilinear relationships, such as polynomial regression or Spearman's rho for ordinal data, which can capture nonlinear trends if the relationship is monotonic.





S17. Ans.(b)

Sol. The correct answer is (b): A-IV, B-I, C-II, D-III

The correct match between the types of research/study and their descriptions is:

A. **Basic Research** is fundamentally about expanding knowledge and understanding, often without immediate practical application. It's closely associated with theory development or enhancement. So, it matches with IV. A study/research that tests or expands on theory.

B. **Correlational Research** investigates the relationship between two or more variables to determine whether they covary in a systematic way. Hence, it aligns with I. Investigations meant to discover whether variables covary.

C. **Case Study** involves an in-depth examination of a single subject or a small group, offering detailed insight into aspects of their lives or conditions. This method is described by II. An in-depth study of a single or a few individuals to see how changes affect the person's behavior.

D. **Longitudinal Study** entails observing and measuring a group of participants over a period to track changes or developments, which matches III. A group of participants is observed and measured over time.

S18. Ans.(a)

Sol. The correct answer is (a); **above 60%**

The UGC (University Grants Commission) regulations 2018 on plagiarism categorize plagiarism into levels based on the percentage of similarity between the submitted work and existing sources. Here's what each option represents in the context of these regulations:

(a) above 60%: This represents Level 3 plagiarism, which is the most severe category under the UGC regulations. It indicates a very high degree of similarity to existing sources, suggesting that a significant portion of the work may have been copied without appropriate citation or acknowledgement. The penalties for Level 3 plagiarism are the most severe and may include dismissal of students from the program, termination of faculty, and other disciplinary actions.

Information booster:

(b) below 10%: Similarities below 10% are often considered acceptable or minor in many academic contexts, including under the UGC regulations. Such a low percentage of similarity typically does not constitute plagiarism and may be attributed to the use of common phrases or technical terms that are not unique to a single source. However, academic integrity still requires proper citation and acknowledgement of direct quotes or specific ideas even within this range.

(c) **above 10% to 30%:** This range may be considered for Level 1 plagiarism under the UGC regulations, depending on the specific context and the nature of the similarities. Level 1 plagiarism is less severe than Level 3 but still requires corrective actions. The penalties might include mandatory revision of the work, a warning, or other educational interventions designed to address and correct the issue.

(d) **above 40% to 60%:** This range likely corresponds to Level 2 plagiarism under the UGC regulations, indicating a substantial amount of similarity to existing sources that raises significant concerns about the originality of the work. Penalties for Level 2 plagiarism are more severe than for Level 1 but less severe than for Level 3. They may include more stringent corrective actions, such as the requirement to withdraw the manuscript or a bar on publishing work for a certain period.





S19. Ans.(b)

Sol. The correct answer is (b); B and C only

Open-ended questions in survey research have specific characteristics that distinguish them from closedended questions. Here's how the options relate to those characteristics:

B. They are useful for exploring new areas. This is true for open-ended questions. They allow respondents to provide detailed answers in their own words, offering richer data and insights into areas that might not be well understood or anticipated by the researcher.

C. They are time-consuming for interviewers to administer. Open-ended questions can indeed be more time-consuming to administer and analyze compared to closed-ended questions because the responses are more varied and require more effort to categorize and interpret.

Information booster: A. The questions suggest certain kinds of answers to the respondents. This is more characteristic of closed-ended questions, where the responses are limited or suggested by the structure of the question itself. Open-ended questions do not suggest specific answers but allow respondents to answer in their own words.

S20. Ans.(b)

Sol. The correct answer is (b); **Both Statement I and Statement II are false.**

In APA style referencing:

- Statement I is false. In a reference written in APA style, the author's surname is written first, followed by the initials of their first and middle names (if provided), not their full first name.
- Statement II is also false. In APA style, the year of publication is written immediately after the authors' names, before the title of the work and certainly before the page number of the article or the book chapter.

S21. Ans.(a)

Sol. The correct answer is (a); **Nominal Scale**

(a) Nominal: Nominal variables represent categorical data without any intrinsic ranking or order. Examples include gender (male, female), types of animals (dog, cat, bird), or colors (red, blue, green). You cannot logically say that one category is higher or lower than another.

Information booster:

(b) **Ordinal:** Ordinal variables represent categories with a natural order or ranking, but the intervals between the ranks may not be equal. Examples include education level (high school, bachelor's, master's, Ph.D.), satisfaction ratings (unsatisfied, neutral, satisfied), or economic status (low income, middle income, high income). You can rank these from lowest to highest, but you can't precisely quantify the differences between ranks.

(c) **Interval:** Interval variables are numeric scales where both the order and the exact differences between the values are meaningful. However, they do not have a true zero point. Examples include temperature scales (Celsius, Fahrenheit), where you can say that 30 degrees is hotter than 20 degrees, and the difference between 20 and 30 degrees is the same as between 30 and 40 degrees. You can rank these values, and the intervals are equal.

(d) **Ratio:** Ratio variables are similar to interval variables, but they do have a meaningful zero point, which allows for the calculation of ratios. Examples include age, height, weight, or income. You can say that someone who earns \$100,000 earns twice as much as someone who earns \$50,000, making meaningful comparisons of ratios possible.





S22. Ans.(b)

Sol. The correct answer is (b) B and C only. Close-ended questions are those that provide respondents with a set of predefined answers from which they must choose. These questions are particularly useful in survey research due to their structured nature, making data collection and analysis more straightforward.

Advantages of Close-Ended Questions:

- (B) **Easy to Process Answers**: Since the responses are predefined, it is simpler to categorize and analyze the data. This allows for efficient data processing and statistical analysis.
- (C) **Reduced Possibility of Variability in Recording Answers**: Close-ended questions minimize the subjective interpretation by the interviewer or data recorder, leading to more consistent data recording and less variability.

Information booster:

• (A) **They allow unusual responses to be derived**: This is not an advantage of close-ended questions. Close-ended questions limit responses to the given options, which reduces the likelihood of capturing unique or unexpected answers. Unusual or detailed responses are more likely to be captured through open-ended questions, where respondents can freely express their thoughts.

S23. Ans.(a)

Sol. The correct answer is (a) A, B, and C only. The options provided to the respondent—"**Very often**," "**Quite often**," "**Not very often**," and "**Not at all**"—are used to measure the frequency of an event or action. However, some of these options suffer from ambiguity because they are not clearly defined, leading to different interpretations by different respondents. Here's why each option may or may not be ambiguous:

- 1. **Very Often**: This option is ambiguous because it is a subjective term that can mean different things to different people. For example, what one person considers "very often" might be seen as "often" by another, leading to inconsistent data collection.
- 2. **Quite Often**: This is another ambiguous option because "quite often" is not a standardized measure of frequency. It could be interpreted in various ways depending on the respondent's perception, thus lacking precision.
- 3. Not Very Often: Similar to the above, "not very often" is vague and ambiguous. It leaves room for varied interpretation as it lacks a clear, quantifiable definition. One respondent may consider an occurrence once a month as "not very often," while another might think the same for once a year.

Information booster:

Not at All: This option is clear and unambiguous because it explicitly means that the event or action never occurs. There is no room for varied interpretation, and hence, it is a precise response option.

S24. Ans.(c)

Sol. The correct answer is (c) A, B, and D only. Measures of dispersion are statistical tools used to describe the spread or variability within a data set. They provide insights into how data points are distributed around a central value (such as the mean). The correct measures of dispersion among the given options are:

1. **Range**: The range is the simplest measure of dispersion, calculated as the difference between the highest and lowest values in a data set. It gives a quick sense of the spread but is highly sensitive to outliers.





- 2. **Quartile Deviation (Interquartile Range, IQR)**: This is a measure of statistical dispersion, being equal to the difference between the upper and lower quartiles (Q3 Q1). It represents the range within which the central 50% of the data lies and is less affected by outliers compared to the range.
- 3. **Standard Deviation**: This is one of the most widely used measures of dispersion. It shows the average distance of each data point from the mean. The standard deviation is more informative because it takes into account all the data points and provides a clear picture of the data's variability.

Information Booster:

Option C (Sum of the deviations about mean): This is not considered a measure of dispersion because it is always zero for any dataset (since the sum of deviations of scores from their mean is zero). This attribute does not provide any information about the spread of the data. Thus, this option is not correct in the context of measures of dispersion.

S25. Ans.(b)

Sol. The correct answer is (b) The two variables are positively associated. This conclusion directly describes the nature of the relationship where both variables move in the same direction, meaning that as one increases, so does the other. This type of relationship indicates a positive correlation or positive association between the two variables.

Information Booster:

Option A (There is no problem with directionality): This option might be misleading as it addresses the issue of directionality in causation, which isn't directly inferred solely from a positive association.

Option C (There are no latent variables affecting the relationship): This cannot be concluded without further analysis to rule out hidden or confounding variables that might influence both of the observed variables.

Option D (There is a third variable responsible for the causation between them): Known as a confounding variable, this also cannot be concluded from the simple observation of a positive association. This would require additional investigation to identify any potential third variables impacting the relationship.

S26. Ans.(d)

Sol. The correct answer is (d) A, B, and C. Content analysis does hold advantages that include being unobtrusive, flexible, and transparent:

Option A (It is a very transparent research method): Content analysis, when conducted rigorously, involves a systematic approach to coding and categorizing content, which can be replicated and reviewed by others, offering transparency in methodology and analysis.

Option B (It is often referred to favorably as an unobtrusive method): As stated, it does not require the researcher to interact with the subjects being studied, which avoids influencing them and allows for the analysis of communication and interactions as they naturally occur.

Option C (It is a highly flexible method): This method is adaptable to various types of data—textual, visual, or multimedia—across different platforms and time periods, making it versatile for numerous research domains.

Information Booster:

Transparency in content analysis is achieved through clear documentation of the methods and criteria used for coding data, which is crucial for the validity and reproducibility of the research.





Unobtrusiveness ensures that the research does not alter the phenomena being studied, particularly important in analyzing communications or historical content.

Flexibility allows researchers to apply content analysis to a variety of data forms, adapting to different theoretical frameworks and accommodating diverse research questions, making it a powerful tool across disciplines.

Snowball sampling - Snowball sampling helps researchers find a sample when they are difficult to locate. Researchers use this technique when the sample size is small and not easily available. This sampling system works like the referral program. Once the researchers find suitable subjects, he asks them for assistance to seek similar subjects to form a considerably good size sample. Network sampling is widely used when rare populations are of interest in survey research. Typically, sampling frames do not exist for rare populations because usually there is little information on the size and magnitude of the population. Network sampling is also called snowball sampling or multiplicity sampling.

Quota Sampling: Hypothetically consider, a researcher wants to study the career goals of male and female employees in an organization. There are 500 employees in the organization, also known as the population. To understand better about a population, the researcher will need only a sample, not the entire population. Further, the researcher is interested in particular strata within the population. Here is where quota sampling helps in dividing the population into strata or groups.

S27. Ans.(b)

Sol. Stratified sampling is the most appropriate method when dealing with a heterogeneous population. In this method, the population is divided into distinct subgroups or strata based on specific characteristics. Each stratum is then sampled separately, ensuring that every subgroup is proportionally represented. This technique enhances the accuracy and reliability of the research findings by reducing variability within subgroups.

For example, if a study involves a population of students from different education levels (high school, undergraduate, and postgraduate), stratified sampling ensures that each education level is adequately represented in the sample.

Hence, the correct answer is (b) Stratified Sampling.

S28. Ans.(d)

32

Sol. A literature review is a comprehensive overview of all the knowledge available on a specific topic till date. When you decide on a research topic, usually the first step you take in the direction of conducting research is to learn more about the previous research published on the topic, and this process includes the literature review. The purpose of writing a literature review is to establish your authority in your research. The reasons for writing a literature review are multifaceted and encompass all the options provided:

A. Knowing what is already known in your research area is essential to identify the gap in the literature that your research aims to fill. This helps to avoid duplication and ensures that you are building upon the foundation established by previous research.

B. Developing an analytic framework through a literature review helps in structuring your research. It provides theoretical underpinning for your chosen research topic and helps to align your research with existing theories.

C. The literature review aids in the interpretation of your findings by comparing and contrasting them with the findings of previous studies. It enables you to position your contributions within the broader academic discourse.

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D. Suggesting further research questions is another critical outcome of a literature review. It highlights the limitations of the existing literature and identifies areas that require further investigation, thereby contributing to the continuity of scholarly research.

Therefore, all the reasons given (A, B, C, and D) are correct and integral to the process of writing a literature review, making option (d) the correct answer.

S29. Ans.(c)

Sol. Among the options given, R is the only open-source software designed for data analysis and statistical computing. Open-source software is characterized by its license, which allows users to freely use, modify, and distribute the software.

SPSS (Statistical Package for the Social Sciences) is a widely used program for statistical analysis in social science but is proprietary software.

MATLAB (Matrix Laboratory) is a programming and numeric computing platform used for algorithm development, data visualization, data analysis, and numerical computation. MATLAB is proprietary software.

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows, and MacOS. R is not only open-source, which means its source code is freely available for modification and redistribution, but it also has a comprehensive ecosystem of packages for various statistical analyses and graphical representations.

MINITAB is statistical software that helps companies and institutions to spot trends, solve problems, and discover valuable insights in data by delivering a comprehensive and best-in-class suite of machine learning, statistical analysis, and process improvement tools. Like SPSS and MATLAB, MINITAB is proprietary software.

Therefore, R (option c) is the correct answer as it is the only open-source software among the ones listed, making it a popular choice for statisticians, researchers, and data analysts across various industries and academic fields.

S30. Ans.(d)

Sol. Quantitative and qualitative research methodologies, while distinct in their approach and emphasis, share several fundamental similarities that underpin their utility in exploring various research questions. These commonalities reflect the core principles of scientific inquiry and underscore the complementary nature of these research strategies.

A. Data Reduction: Both quantitative and qualitative research involve data reduction as a critical step in their analytical processes. In quantitative research, data reduction might involve statistical analysis to summarize vast datasets into comprehensible results. Similarly, qualitative research entails distilling large volumes of textual or observational data into themes or categories to facilitate understanding and interpretation. The objective in both approaches is to make sense of the collected data by identifying patterns, trends, or insights that can be communicated effectively.

B. Variation in Data: Understanding variation in data is a central concern of both quantitative and qualitative research. Quantitative methods often focus on measuring and analyzing the variance or differences within and between datasets to draw conclusions about the relationships between variables. Qualitative research, while not typically engaging in statistical analysis of variance, is deeply concerned with exploring the diversity of experiences, perceptions, and meanings across different contexts or participants. This exploration helps researchers understand the range and nature of phenomena under study.





E. Answering Research Questions: The ultimate goal of both quantitative and qualitative research is to answer research questions posed at the outset of the study. Whether through statistical analysis of numerical data or through the thematic analysis of text and observations, both methodologies aim to generate findings that contribute to knowledge in a specific field. The research questions guide the study design, data collection, and analysis, leading to conclusions that address the inquiries that motivated the research.

The emphasis on generalization (D) is where quantitative and qualitative research diverge significantly. Quantitative research often seeks to generalize findings from a sample to a larger population, relying on the representativeness of the sample and statistical significance of the results. In contrast, qualitative research typically focuses on depth and richness of understanding within specific contexts, with less emphasis on generalizability. Thus, generalization is not a shared emphasis across both methodologies.

Similarly, while contextual understanding (C) is crucial in qualitative research for interpreting data within its socio-cultural and environmental settings, quantitative research may not always emphasize context to the same extent, focusing instead on the quantifiable aspects of data and their relationships. Therefore, C is not a shared emphasis in the strict sense.

In summary, the similarities between quantitative and qualitative research methodologies—specifically, their focus on data reduction, variation in data, and the overarching goal of answering research questions—highlight their roles as complementary approaches to scientific inquiry, making option (d) the correct answer.

S31. Ans.(a)

Sol. The epistemological position that advocates for the application of methods from the natural sciences to the study of social reality and beyond is known as Positivism. This position holds that the same scientific principles and methods used in the natural sciences can be applied to the social sciences to observe, explain, and predict social phenomena. Positivism relies on empirical evidence obtained through observation and experimentation, emphasizing objectivity, quantification, and the search for universal laws or theories that govern social behavior.

Interpretivism (Option b) contrasts with positivism, as it focuses on understanding the subjective meaning and complexity of human experience rather than seeking objective truths or laws. Interpretivists emphasize the importance of context, culture, and the researcher's interpretation in the study of social phenomena.

Objectivism (Option c) is a philosophical stance asserting that certain truths exist independently of human perception or beliefs. While related to the debate on research methodology, it doesn't specifically advocate the application of natural science methods to social studies in the way positivism does.

Constructionism (Option d), also known as social constructivism, suggests that reality is socially constructed through human interaction and language. It emphasizes the subjective construction of meaning rather than the objective discovery of truth.

Therefore, Positivism (Option a) is the correct answer, as it directly advocates for the application of natural science methods to the study of social realities, aligning with the principles of empirical observation, hypothesis testing, and the pursuit of objective knowledge about social phenomena.





S32. Ans.(c)

Sol. Experimental research is the correct answer because it specifically involves manipulating one variable to determine if changes in one variable cause changes in another variable. This manipulation while controlling other potential extraneous variables ensures that any observed effects on the dependent variable are indeed due to the independent variable. Thus, option (c) is the correct choice for systematically eliminating extraneous variables to establish a cause-effect relationship.

Information Booster:

Option A (Qualitative research) typically focuses on exploring and understanding opinions, behaviors, and experiences through methods like interviews and observations without the systematic control or manipulation of variables.

- Option B (Longitudinal research) involves observing the same subjects on many occasions over a period of time but does not inherently involve controlling or manipulating variables to isolate specific effects.

- Option D (Correlational research) examines the relationship or association between two or more variables but does not involve manipulation of variables to control for extraneous factors, hence it cannot establish causation, only correlation.

S33. Ans.(b)

Sol. When the age of the researcher affects the behavior of the study participant, this influence can be seen as involving both biological (age as a biological factor) and social aspects (how society perceives and reacts to age differences), which might suggest the Biosocial Effect. Therefore, if option (b) Biosocial Effect is the correct answer this would emphasize the integration of both biological age and social dynamics affecting behavior.

Information Booster:

- Option A (Sociological Effect): Still pertains purely to societal structures and effects, not directly considering the biological aspects of age.

- Option C (Psychological Effect) and Option D (Psychosocial Effect): While these focus on psychological and combined psychological-social influences respectively, neither specifically address the biological component that the term "biosocial" encompasses, which includes biological aspects like age combined with social factors in influencing behaviors. Thus, if emphasizing the biological aspect of age alongside social responses, option (b) would be the correct option.

S34. Ans.(c)

Sol. In a negatively skewed distribution, the tail is on the left side of the distribution, which causes the mean to be less than the mode due to the pull of the tail. The properties of such a distribution include: - Mean < Median < Mode: This ordering means that the mean is the least among the three, with the mode being the greatest. Therefore, statements (B) "Mean < Median" and (D) "Mode > Mean" are both true. Hence, option (c) "B and D Only" is the correct answer.

Information Booster:

- Option A (Mean > Mode) and Option C (Median < Mode): These are characteristics of a positively skewed distribution where the tail is on the right, making these options incorrect for a negatively skewed distribution. In a negatively skewed scenario, the mean is pulled to the left, resulting in it being less than both the median and the mode, not greater.





S35. Ans.(c)

Sol. The correct sequence for conducting a literature review begins with identifying key terms for the search (C). This helps in effectively locating relevant literature (A). Once the literature is located, it is important to critically evaluate and select the literature that is most relevant to the research questions or hypotheses (E). After evaluation and selection, organizing the literature (B) becomes crucial for structuring the review. Finally, writing the literature review (D) synthesizes and discusses the findings of the selected studies. Thus, the correct sequence is (C), (A), (E), (B), (D), making option (c) the correct choice. Information Booster:

- Options (a), (b), and (d) present sequences that would either start with locating literature before identifying search terms or organizing literature before evaluating it, both of which would be inefficient or could miss critical literature relevant to the research questions. The steps must flow logically from planning (defining search terms) to execution (locating and evaluating literature) to synthesis (writing the review).

S36. Ans.(b)

Sol. (b) A and C Only

To determine whether the null hypothesis is likely to be rejected, we typically compare the p-value to the significance level (commonly 0.05 or 5%). If the p-value is less than the significance level, the null hypothesis is rejected.

Option A (0.38 of 2%): If interpreted correctly as $(0.38 \times 0.02 = 0.0076)$, this value is less than 0.05, so the null hypothesis is likely to be rejected.

Option B (38%): This corresponds to 0.38, which is greater than 0.05, so the null hypothesis is not likely to be rejected.

Option C (2%): This is 0.02, which is less than 0.05, so the null hypothesis is likely to be rejected. Option D (0.46%): This is 0.0046, which is less than 0.05, so the null hypothesis is likely to be rejected. Therefore, the correct answer is (b) A and C Only.

S37. Ans.(d)

Sol. Statement I is false because according to the UGC Regulations on Plagiarism, 2018, the authorities of higher education institutions do have the power to take cognizance of acts of plagiarism on their own. The regulations outline specific procedures and mechanisms for institutions to handle cases of plagiarism, including forming committees to investigate and take action against such acts.

Statement II is true as plagiarism indeed refers to the practice of taking someone else's work or ideas and presenting them as one's own without proper acknowledgment. This definition is widely accepted and is a fundamental principle in academic integrity.

S38. Ans.(d)

Sol. Statement I is false. Cross-sectional research involves studying a population at a single point in time or over a short period. It does not involve studying the same population over time; that would be characteristic of longitudinal research.

Statement II is true. In a retrospective study, researchers collect data about past events or experiences by relying on participants' memories and recollections. This type of study looks backward in time to investigate potential exposures or conditions that might have influenced current outcomes.





S39. Ans.(c)

Sol. In naturalistic observation, one/zero sampling (also known as interval recording or dichotomous recording) is a method where the observer records whether a specific behavior occurs (1) or does not occur (0) during a specified interval of time. This method is used to simplify data collection and analysis, providing a clear and straightforward way to track the presence or absence of behaviors over time. Information Booster:

Cluster Sampling: A sampling technique where the population is divided into clusters, and a random sample of these clusters is selected for study.

Time-Interval Sampling: A sampling method where observations are made at predetermined intervals to capture data systematically over time.

Continuous Real-Time Sampling: This involves continuously recording behaviors in real-time as they occur without predefined intervals, allowing for a detailed and comprehensive record of all observed behaviors.

S40. Ans.(d)

Sol. The F-test is the most commonly employed test when researchers use designs that call for multiple groups, as it allows them to compare the variances of the groups and determine if there is a statistically significant difference in the means.

This test is used for comparing the variances of two or more groups. It's particularly useful for determining if there is a statistically significant difference in the means of multiple groups.

S41. Ans.(d)

Sol. Open-ended questions are generally advantageous in survey research because they provide respondents with more freedom and flexibility to express their opinions and experiences. However, one disadvantage is **They are easy for the interviewers and respondents to complete.**

While open-ended questions offer more depth and insight, they can be more time-consuming and challenging to both administer and analyze compared to closed-ended questions with pre-defined options. Respondents may need more time to formulate their thoughts and provide detailed responses. Additionally, analyzing open-ended responses requires careful coding and interpretation, which can be a complex process for researchers.

Advantage of open ended questions are

(a) They are useful for explaining areas in which researcher has limited knowledge: Open-ended questions allow respondents to elaborate on their experiences and provide insights that the researcher may not have anticipated. This can be particularly useful in exploratory research where the researcher is trying to gain a deeper understanding of a new topic.

(b) Respondents can answer in their own terms: Open-ended questions avoid limiting respondents to predefined options, allowing them to express their views and experiences in their own unique way. This can lead to richer and more nuanced data.

(c) They allow unusual responses to be derived: Open-ended questions can reveal unexpected or surprising insights that may not have been captured through closed-ended questions. This can be valuable for challenging existing assumptions and uncovering new lines of inquiry.





S42. Ans.(d)

Sol. In APA style, the information pertaining to a reference in a reference section is arranged in the following order is

1. Author's name (C): This comes first, typically in the format "Last Name, Initials."

2. Year of publication (B): This follows the author's name and is enclosed in parentheses.

3. Title of the article (D): This comes next and is italicized.

4. Page number (A): If applicable, the page number appears at the end, preceded by "pp." for multiple pages or "p." for a single page.

Therefore, the correct order is C, B, D, A.

S43. Ans.(b)

Sol. Measure of central tendency included

Arithmetic mean: This is the sum of all values in the dataset divided by the number of values. It is the most common measure of central tendency and is often referred to as simply the "average."

Median: This is the middle value in a data set when the values are arranged in ascending or descending order. If there are two middle values, the median is the average of those two values.

Mode: This is the value that appears most frequently in a dataset. A data set can have one mode, two modes (bimodal), or even multiple modes.

Therefore, the correct answer is (b) A, B and D only.

S44. Ans.(d)

Sol. The attitude of a researcher can significantly influence the psychosocial effects on study participants. A researcher's demeanor, bias, or preconceptions may unconsciously affect how they interact with participants, potentially leading to unintended emotional or psychological responses. For example, if a researcher displays a negative attitude, participants may feel uncomfortable, impacting their emotional well-being. Therefore, a researcher's attitude is a crucial factor to consider in research ethics and ensuring the well-being of study participants.

Information Booster

Age: While age can be a relevant factor in research, it's not typically a direct cause of psychosocial effects. It may influence participant experiences indirectly through generational differences but is not the primary factor.

Race: Race may contribute to psychosocial effects, but it's usually related to biases and prejudices, not the researcher's characteristics.

Sex: Similar to race, a researcher's sex may influence participant experiences, but it's more about how gender biases and stereotypes are managed in research rather than the researcher's own sex.

S45. Ans.(c)

Sol. The p-value is a measure of the evidence against the null hypothesis in hypothesis testing. A smaller p-value indicates stronger evidence against the null hypothesis, meaning that there is a significant effect. In this context, we're interested in p-values that are significant at the 1% level, meaning p-values less than or equal to 0.01.





A. 0.004: This is less than 0.01, so it is significant at the 1% level.

D. 0.001: This is less than 0.01, so it is significant at the 1% level.

Therefore, **only options A and D have p-values** that can be considered significant at the 1% level. Information Booster

0.99: This is much greater than 0.01, so it is not significant.

0.995: This is also greater than 0.01, so not significant.

0.1: This is greater than 0.01, so it is not significant.

S46. Ans.(a)

Sol. Ethical issues in research involving human subjects generally focus on the well-being, rights, and dignity of the participants.

A. Lack of informed consent: Ethically, participants need to be fully informed about the research and consent to it voluntarily. Lack of informed consent is a major ethical issue.

B. Physical and psychological harm: Causing any form of harm to the participants is clearly unethical.

C. Excessive inducements: Offering excessive incentives could be seen as coercion, making it unethical.

Therefore, A, B, and C are ethical issues, while D is an ethical practice. Hence, the correct answer is (a) A, B and C only.

Information Booster

Debriefing: This is actually an ethical practice, not an ethical issue. It involves explaining the research to participants after it's concluded, especially if deception was used.

S47. Ans.(a)

Sol. Statement I: The standard deviation of a series of repeated measurements indeed estimates the likely size of the chance error in a single measurement. Standard deviation measures the dispersion or spread of the measurements around the mean, which helps in understanding the extent of variability due to random errors.

Statement II: Bias affects all measurements in the same way, pushing them in the same direction. Bias is a systematic error that consistently skews all measurements in a particular direction, either higher or lower than the true value.

(a) Both Statement I and Statement II are true.

S48. Ans.(b)

Sol. Statement I: In a ratio scale, the zero point is not arbitrary; it represents an absolute absence of the attribute being measured. For example, in a temperature scale measured in Kelvin, 0 represents absolute zero, a point at which particles theoretically cease to vibrate.

Statement II: The nominal scale does not allow for the ordering or ranking of data. In a nominal scale, categories are used for labeling variables, without any quantitative value or order. For example, categorizing fruits as "apple," "banana," or "cherry" does not allow for any sort of ranking.

Both statements are incorrect, making **the correct answer (b) Both Statement I and Statement II are false**.





S49. Ans.(a)

Sol. The question of whether a measure devised for a concept truly reflects the concept it is intended to denote is directly related to "Measurement validity." Measurement validity, also known as construct validity, refers to the degree to which a test measures what it claims, or purports, to be measuring. In simple terms, it ensures that the method of measurement matches the concept being measured.

Information booster: The other options, ecological validity, internal validity, and external validity, relate to different aspects of validity in research. Ecological validity concerns how well findings generalize to real-world settings, internal validity addresses the rigor with which a study is conducted, and external validity pertains to the extent to which findings can be generalized beyond the study's sample.

S50. Ans.(c)

Sol. According to the UGC (University Grants Commission) Regulations, 2018 on plagiarism in India, a similarity index of 42% falls under Level 2 plagiarism.

The UGC defines three levels of plagiarism: Level 1 (Similarities above 10% to 40%), Level 2 (Above 40% to 60%), and Level 3 (Above 60%). Level 2 plagiarism, therefore, encompasses similarities from above 40% to 60%, and a similarity index of 42% is squarely within this range. This level of plagiarism may lead to more severe penalties than Level 1, reflecting the higher degree of similarity to existing works.

S51. Ans.(d)

Sol. Purposive sampling, also known as judgmental sampling, is the correct answer. In purposive sampling, the researcher uses their judgment to select participants that are most appropriate for the research study. This method is often used when a limited number of people have expertise in the area being researched or when the researcher is interested in a specific subgroup within the population. Unlike random sampling methods, purposive sampling does not aim for a representative cross-section of the population, but rather focuses on specific characteristics or criteria deemed relevant to the research question.

Information booster: The other options—quota sampling, convenience sampling, and cluster sampling are different sampling techniques with distinct characteristics and are not synonymous with judgmental sampling.

S52. Ans.(c)

40

Sol. Statement I: The risk of rejecting the null hypothesis when it should be confirmed is more at 0.5 p-level than at 0.01 p-level.

This statement is comparing the likelihood of rejecting the null hypothesis (Type I error) at different plevels.

A p-level (p-value) is the probability of observing the data, or something more extreme, assuming the null hypothesis is true.

A higher p-level (e.g., 0.5) means you are more likely to reject the null hypothesis because you are allowing more room for chance (a higher probability threshold).

A lower p-level (e.g., 0.01) means you require stronger evidence against the null hypothesis before rejecting it, thus reducing the likelihood of a Type I error.

Therefore, Statement I is true: The risk of rejecting the null hypothesis when it should be confirmed is indeed higher at a 0.5 p-level than at a 0.01 p-level.





Statement II: The risk of committing a Type I error is lower at 0.05 p-level than at 0.01 p-level. A Type I error occurs when you reject the null hypothesis when it is actually true.

The p-level represents the threshold for making this error. A lower p-level means you are less willing to reject the null hypothesis, thus reducing the risk of a Type I error.

A 0.01 p-level is more stringent than a 0.05 p-level, meaning it is less likely to reject the null hypothesis. Therefore, Statement II is false: The risk of committing a Type I error is actually lower at a 0.01 p-level than at a 0.05 p-level.

Correct answer: (c) Statement I is true but Statement II is false.

S53. Ans.(c)

Sol. Statement I is accurate as a cohort is indeed a group whose members share a common characteristic or experience within a defined period. This term is often used in medical and psychological research, demographic studies, and even in marketing.

Statement II, however, is incorrect with respect to a prospective study. In a prospective study, the researcher observes the subjects over a period for outcomes of interest, rather than relying on past recollections or memories. This approach is used to establish a temporal sequence of events and is particularly useful in establishing cause-and-effect relationships in research.

S54. Ans.(d)

Sol. The correct option is (d).

Statement I is false because a dichotomous variable is one that has only two categories or levels. For example, a "yes" or "no" response, "male" or "female" gender classification, etc., are dichotomous. It does not have more than two categories.

Statement II is true as a nominal variable is a type of variable that can have two or more categories without any intrinsic ordering. Examples include variables like nationality, hair color, or types of fruit. These categories are distinct and have no specific order.

S55. Ans.(c)

Sol. According to the UGC Regulations 2018 on plagiarism, common knowledge or coincidental terms, up to fourteen consecutive words are to be excluded while checking for similarity to detect plagiarism. This regulation aims to maintain academic integrity and quality by providing clear guidelines for identifying and managing instances of plagiarism in academic work. By setting a specific threshold for the number of consecutive words, the UGC provides a practical framework for distinguishing between coincidental similarity and genuine instances of plagiarism.

S56. Ans.(b)

Sol. Attrition threat, also known as mortality threat, refers to the problem that occurs in research when participants drop out before the study is completed. This dropout can lead to changes in the nature of the sample, potentially causing the final results to be non-representative of the original group. Attrition can skew the findings, especially if the dropouts have certain characteristics in common that are different from those who remain. This issue challenges the internal validity of the study, as it can become unclear whether the outcomes are due to the experimental intervention or the changed composition of the group. Selection, history, and testing threats are other forms of threats to internal validity but do not directly relate to participant dropout.

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S57. Ans.(b)

Sol. Observational research does not involve active manipulation of variables or control of the environment; rather, it involves observing subjects in their natural state without interference. Therefore, Statement I is false.

Statement II is also false because observational research does not typically allow the researcher to eliminate the influence of extraneous factors. Instead, it often results in a higher number of extraneous factors because there is no manipulation or control exerted over the variables or the environment.

S58. Ans.(c)

Sol. The term "biosocial effect" refers to the influence that social and biological factors have on individuals. In the context of research, if the researcher's sex affects the behavior of a participant, it is considered a biosocial effect because it combines biological aspects (sex of the researcher) with social interactions (the participant's reaction to the researcher's sex). This can be an important consideration in the design and interpretation of studies, particularly those involving personal or sensitive topics where the sex of the researcher might influence the responses or behaviors of participants.

S59. Ans.(a)

Sol. A p-value of 0.005 indicates there is a 0.5% probability that the observed correlation could be due to chance if the null hypothesis were true. For a test at the 1% significance level, we reject the null hypothesis if the p-value is less than 0.01. Since 0.005 is less than 0.01, it signifies a significant result, suggesting the sample correlation coefficient is statistically significant at the 1% level.

Information Booster

0.02

A p-value of 0.02 means there's a 2% chance of observing the correlation by random chance. It's significant at the 5% level but not at the 1% level.

0.99

This p-value is far above any conventional significance level, suggesting there's a 99% probability the observed correlation is due to chance, not significant at the 1% level.

0.95

Similar to 0.99, a p-value of 0.95 is well above the 1% significance threshold, indicating a very high likelihood that the correlation observed could be due to random variation.

S60. Ans.(d)

Sol. The nominal scale is the simplest form of measurement, where data are categorized without any quantitative value or order (e.g., gender, ethnicity). Next is the ordinal scale, which involves a ranked order (e.g., finishing places in a race), but the differences between ranks are not necessarily equal. The interval scale has equal intervals between values but lacks a true zero point (e.g., temperature in Celsius or Fahrenheit). Lastly, the ratio scale includes all the properties of an interval scale and also features a true zero point, allowing for statements about how many times greater one value is compared to another (e.g., weight, height).

Thus, the evolution from the simplest to the most complex is Nominal, Ordinal, Interval, and Ratio.





S61. Ans.(a)

Sol. Convergent validity refers to the degree to which two measures of constructs that theoretically should be related, are in fact related. When different studies on a given topic yield similar results or conclusions, it suggests that the measures used are indeed assessing the same underlying construct, thus demonstrating convergent validity.

Information Booster

Criterion validity assesses how well one measure predicts an outcome based on another measure, often a "gold standard" or external criterion. It is not directly related to the consistency of results across different studies.

Divergent validity, also known as discriminant validity, involves measures of constructs that should not be related to each other. This is the opposite of convergent validity and does not concern the similarity of results across studies.

Construct validity is the overall assessment of how well a test measures the concept or construct it's intended to measure. While it encompasses both convergent and divergent validity, it's not specifically about the similarity of conclusions across multiple studies.

S62. Ans.(c)

Sol. Statement I is true. A blind study, particularly a single-blind study, is designed to prevent participants from knowing certain details of the experiment, such as whether they are in the control or experimental group. This is done to prevent bias in the responses of the participants, which can occur if they know what the experimenter is looking for. This helps in maintaining the integrity of the research and ensures that the results are due to the experimental conditions and not due to participants' preconceived notions or expectations.

Statement II, however, is false. While interaction between the experimenter and participants can sometimes be beneficial, especially in qualitative research, it is not always beneficial in social science research. In some cases, particularly in quantitative research, too much interaction can introduce bias or influence participants' responses, thereby affecting the validity of the results. Therefore, the level and nature of interaction should be carefully managed depending on the research design and objectives.

S63. Ans.(a)

Sol. Assertion A states that experimental research allows for the elimination of the influence of many extraneous factors. This is true as experimental research typically involves the manipulation of one or more independent variables and the measurement of their effect on dependent variables, while controlling for extraneous variables. This control is what helps in eliminating the influence of external factors that are not part of the study.

Reason R explains that in experimental research, variables are actively manipulated and the environment is controlled as much as possible. This is also true and directly relates to the assertion. By actively manipulating variables and controlling the environment, researchers can isolate the effects of the independent variable on the dependent variable, thus eliminating the influence of extraneous factors. Therefore, R is the correct explanation of A.





S64. Ans.(d)

Sol. External validity refers to the extent to which the results of a study can be generalized or applied to contexts outside the specific conditions of the research. This includes different populations, settings, times, and measures. External validity addresses the question of whether the research findings can be applied to real-world situations beyond the particular sample or environment used in the study.

Information booster:

Internal Validity (Option a) refers to how well a study is conducted, specifically whether it accurately measures what it is intended to measure without being influenced by other factors.

Convergent Validity (Option b) and Divergent Validity (Option c) are types of construct validity. Convergent validity checks if measures that are supposed to be related are actually related. Divergent validity ensures that measures that are not supposed to be related are indeed unrelated.

S65. Ans.(d)

Sol. The correct sequence of steps in a research process is as follows:

Identifying a research problem (D): This is the first step where the researcher identifies what problem or area they wish to study or explore.

Reviewing the literature (B): After identifying the problem, the researcher reviews existing literature to understand what has already been studied and where there are gaps in knowledge.

Collecting the data (A): Once the literature review is complete and the research problem is clearly defined, the next step is to collect data relevant to the research question.

Analyzing and interpreting the data (E): After data collection, the researcher analyzes and interprets the data to draw conclusions.

Reporting the research outcome (C): Finally, the findings are reported and shared with the scholarly community or other stakeholders.

Thus, the correct order is D (Identifying a research problem), B (Reviewing the literature), A (Collecting the data), E (Analyzing and interpreting the data), and C (Reporting the research outcome).

S66. Ans.(d)

Sol. The principle of causation involved in the need to rule out other possible causal variables to conclude that a given variable has a causal relation with a second variable is related to the "Internal Validity Rule." Internal validity refers to the extent to which a study can rule out or make unlikely alternate explanations for the results, thereby asserting a causal relationship between variables. This involves ensuring that the study is designed and conducted in such a way that only the hypothesized causes are influencing the observed effect, excluding other possible variables. While the other options, causal ambiguity, temporal precedence, and covariance are important aspects of establishing causation, they do not specifically address the need to rule out other variables as directly as internal validity does. Thus, the correct answer is (d) Internal validity rule.

S67. Ans.(d)

Sol. Statement I: Content analysis is an approach to the analysis of documents and texts that seeks to analyze them in qualitative terms. This statement is false. Content analysis can be both qualitative and quantitative. It is a research method used for systematically analyzing the content of communication, which can involve quantifying patterns in data (quantitative) as well as interpreting meanings and themes (qualitative).





Statement II: Content analysis is a very transparent research method. This statement is true. When properly conducted, content analysis is transparent because it involves systematic and replicable procedures that can be clearly described and followed, allowing others to understand how the data was collected and analyzed.

Therefore, the correct answer is (d) Statement I is false but Statement II is true.

S68. Ans.(b)

Sol. The correct option is (b). Research can be defined as a process of acquiring new knowledge. Fundamental research is also called primary or pure research, which aims to add something new to knowledge. It is purely related to knowledge generation. It generates universal principles, underlying theories, or processes.

S69. Ans.(b)

Sol. The diagram that would be useful in depicting the median value in the data is a "Box plot" (option b). A box plot, also known as a box-and-whisker plot, is particularly effective in showing the median (middle value) of a dataset along with other quartile values (first quartile, third quartile) and potential outliers. The median is represented by the line inside the box in a box plot, making it easy to visualize the central tendency of the data.

S70. Ans.(c)

Sol. Evaluating the two statements in the context of academic research:

Statement I: Review of literature helps the researcher with the interpretation of his/her findings. This statement is true. Reviewing existing literature provides a foundation for understanding the context of a research study, helps in identifying gaps in the current knowledge, and aids in the interpretation and validation of new research findings.

Statement II: Review of literature is not of any help in learning different theoretical and methodological approaches to your research area. This statement is false. A literature review is crucial for understanding the various theoretical frameworks and methodological approaches that have been applied in a given research area. It helps researchers to learn from previous studies, adopt suitable methodologies, and build upon existing theories.

Given these considerations, the correct answer is (c) Statement I is true but Statement II is false.

S71. Ans.(a)

Sol. The disadvantages of closed-ended questions in survey research include:

Difficulty in Making Forced-Choice Answers Exhaustive (A): One challenge with closed-ended questions is ensuring that the provided options cover all possible responses. Sometimes respondents might have answers that do not fit within the provided options.

Loss of Spontaneity in Respondent's Answers (B): Closed-ended questions limit the respondents' ability to express their thoughts freely, leading to a loss of spontaneity and potentially richer, more informative responses.

However, closed-ended questions are generally not time-consuming for interviewers to administer (C); in fact, they are usually quicker to administer and easier to analyze than open-ended questions. Therefore, the correct answer is (a) A and B only.





S72. Ans.(d)

Sol. The sampling method in which the sample is also known as an accidental sample or a haphazard sample is "Convenience sampling." In convenience sampling, participants are selected based on their easy accessibility and proximity to the researcher. This method does not follow a structured approach to sample selection, often resulting in a non-random and potentially biased sample. It's termed "accidental" or "haphazard" due to the casual manner in which participants are chosen. Purposive, quota, and stratified random sampling are more structured methods with specific selection criteria, making (d) Convenience sampling the correct answer.

S73. Ans.(c)

Sol. In the context of mass communication, the term 'Correlation' refers to the function of interpretation. This involves the media's role in interpreting and discussing the significance and impact of news events and information. This function helps the audience understand and make sense of the information presented to them. It goes beyond just presenting news or information (information gathering), influencing social behaviors or norms (socialization), or probing and examining events or issues in depth (investigation). Therefore, the correct answer is (c) Interpretation.

S74. Ans.(a)

Sol. Closed-ended questions in survey research do not allow for unusual responses that the survey researcher may not have contemplated. These questions typically offer predefined answers, which limit the respondents' ability to provide unique or unexpected responses. On the other hand, they are easier for interviewers and respondents to complete, reduce variability in recording answers, and may lead to a loss of spontaneity in respondents' answers due to the limited response options. Therefore, option (a) is not a characteristic of closed-ended questions.

S75. Ans.(b)

Sol. B. Hypothesis - Formulating the hypothesis to be tested.

E. Research Design - Designing the research methodology to test the hypothesis.

C. Process data - Collecting and processing the data.

A. Analyze data - Analyzing the processed data.

D. Findings - Presenting the findings based on the analysis.

Therefore, the sequence B, E, C, A, D correctly represents these steps in quantitative research, making option (b) the correct answer.

S76. Ans.(c)

Sol. A histogram is the graphical representation of a frequency distribution. It is used to depict the distribution of a set of continuous data points by dividing the data into bins or intervals and showing the frequency of observations within each bin. Unlike bar charts, which represent categorical data with discrete bars, histograms use adjacent bars to represent the frequency of ranges of values. Line charts are typically used for showing trends over time, and pie charts represent proportions of a whole. Thus, the correct answer is (c) Histogram.





S77. Ans.(c)

Sol. The concept of generalizing the results of a study beyond the specific research context is directly related to "external validity." External validity refers to the extent to which the findings of a study can be generalized to other settings, populations, and times. It assesses the applicability of the research results to real-world scenarios. Measurement validity concerns the accuracy of the measurement tools, internal validity refers to the correctness of the study's design within its context, and ecological validity is a form of external validity that focuses specifically on the naturalness of the setting. Hence, the correct answer is (c) External validity.

S78. Ans.(b)

Sol. Statement I is incorrect because a dependent variable can be dichotomous. A dichotomous variable is one that takes on one of only two possible values, often labeled as "0" and "1" or "True" and "False". There's no inherent reason why a dependent variable, which is the variable being tested and measured in an experiment, can't be dichotomous.

Statement II is also incorrect. An independent variable, which is manipulated to observe its effect on the dependent variable, does not have to be dichotomous. Independent variables can be dichotomous, continuous, categorical, etc., depending on the nature of the study and what is being measured or tested.

S79. Ans.(d)

Sol. The term used to describe human communication behavior related to personal space is "territoriality." Territoriality in human communication refers to the way people use space to communicate ownership or occupancy of areas and possessions. It involves behaviors and attitudes that individuals or groups exhibit based on their perceived or actual claim to physical spaces and objects. This can be seen in personal space preferences, how individuals arrange their work or living spaces, and how they respond to the presence of others in these spaces.

S80. Ans.(a)

Sol. Maturation threat is a threat to internal validity that occurs when changes in the participants themselves, rather than the treatment or intervention being studied, account for the observed results. In the context of the given scenario, participants may become bored or fatigued over time, which could lead to changes in their behavior or performance on the measures being used in the study. These changes could then be misinterpreted as being due to the treatment or intervention, when in fact they are simply due to the natural process of maturation.

S81. Ans.(b)

Sol. Observational research is a type of research in which the researcher does not manipulate any variables. Instead, the researcher simply observes and records the behavior of the participants. This type of research is often used to study human and animal behavior in natural settings.

Information booster: Quasi-experimental research is a type of research in which the researcher manipulates one or more variables, but the manipulation is not as rigorous as in a true experiment. This type of research is often used when it is not possible or ethical to conduct a true experiment.





Subjective research is a type of research in which the researcher collects data on people's subjective experiences. This type of research can be used to study a wide range of topics, such as people's attitudes, beliefs, and feelings.

Anthropometric research is a type of research in which the researcher collects data on people's physical characteristics. This type of research is often used to study human evolution and adaptation. The correct answer is (b) Observational research.

S82. Ans.(b)

Sol. Analysis of variance (ANOVA) is a statistical test that permits assessment of possible significance of difference across mean of multiple group. It is used to determine whether there are statistically significant differences between the means of two or more groups. ANOVA is a versatile statistical tool that can be used to compare means across a variety of groups and factors.

S83. Ans.(b)

Sol. Level 3 plagiarism is the most severe level of plagiarism, and it is defined as "copying more than 60% of the thesis from published or unpublished sources without proper citation." The penalty for level 3 plagiarism is cancellation of the student's registration for the program.

S84. Ans.(d)

Sol. Statement I is incorrect because increasing the sample size does not necessarily reduce bias in the selection procedure. Bias is a systematic error in the selection process that favors certain outcomes over others. Increasing the sample size may simply increase the number of biased outcomes, not reduce the bias itself.

Statement II is correct because the chances of an individual observed value deviating more than 3 times the standard deviation from the mean value in a normally distributed data are very low. The empirical rule (or the 68-95-99.7 rule) states that for a normally distributed data:

S85. Ans.(a)

Sol. Statement I is true because the p-value of a test is a measure of the probability of obtaining a test result as extreme or more extreme than the one observed, assuming the null hypothesis is true. The p-value is calculated based on the sample size, and a smaller sample size will generally result in a larger p-value. Statement II is also true because an important difference may not be statistically significant if the sample size is too small. This is because a smaller sample size will make it more difficult to detect a true difference between two groups. In other words, a small sample size can make it more likely that a true difference will be masked by random variation.

Therefore, both Statement I and Statement II are true.

S86. Ans.(a)

Sol. Longitudinal research involves repeatedly observing the same variables or groups over a period of time, often years or even decades, to identify patterns, changes, and possible causes by monitoring the same subjects. The specific types of longitudinal research and their characteristics can be clarified to help distinguish which among the options listed is not a type of longitudinal research:





Trend Study: This involves studying trends over time within a population. Though individuals studied might change, the focus is on tracking changes regarding a particular aspect, such as attitudes or behaviors. Prospective Study: Also known as a cohort study or panel study, this type of research follows a group of people who share a common characteristic or experience within a specified period. It observes outcomes over the long term from a defined point.

Cohort Study: Similar to a prospective study, a cohort study follows a group of individuals over time, monitoring their exposure to certain risk factors to determine how these affect rates of a certain outcome. Cross-Sectional Study: This type of study analyzes data from a population at one specific point in time. Unlike longitudinal studies, which follow subjects over a period of time, a cross-sectional study provides a snapshot, making it non-longitudinal.

Given these descriptions:

(a) Cross-sectional study is the correct answer as it is not a type of longitudinal research. It is designed to measure a specific point in time rather than over an extended period.

The correct answer is: (a) Cross-sectional study

S87. Ans.(c)

Sol. Statement I is true. Gaining access to a public or social setting is an important issue in ethnographic research. Ethnographers need to be able to gain the trust and cooperation of the people they are studying in order to collect data. This can be a challenge, as people may be hesitant to share personal information with a stranger. There are a number of ways to gain access to a public or social setting, such as networking, attending events, and volunteering.

Statement II is false. There is a distinction between overt and covert ethnography in terms of access and participation. Overt ethnographers openly disclose their identity and role as researchers to the people they are studying. Covert ethnographers, on the other hand, do not disclose their identity or role as researchers. This can be done by pretending to be a member of the group being studied or by not explicitly stating that they are conducting research.

S88. Ans.(c)

Sol. One of the characteristics of probability sampling is random selection. In probability sampling, each member of the population has a known and non-zero chance of being selected for the sample. This helps to minimize bias and ensure that the sample is representative of the population, making it a fundamental principle of probability sampling.

S89. Ans.(d)

Sol. The characteristics of a qualitative interview typically include:

A. It is less structured: Qualitative interviews are often less structured compared to quantitative surveys. In qualitative interviews, there is more flexibility in the way questions are asked and in the sequence of questions. The interviewer may follow up on interesting responses and explore unexpected topics, allowing for a more open and natural conversation.

C. The interview is allowed to ramble: Qualitative interviews may allow for a certain degree of "rambling" or free-flowing conversation. This means that participants have the opportunity to express their thoughts and experiences in their own words and at their own pace. The interviewer may not always steer the conversation in a highly structured manner, giving participants room to share their insights and stories.





E. It is flexible in approach: Qualitative interviews are known for their flexibility. The interviewer can adapt the questions and the direction of the interview based on the participant's responses. If something unexpected and valuable comes up during the interview, the interviewer can explore it further, even if it wasn't part of the original interview guide. This flexibility allows for richer data collection. Thus, correct answer is option (d) A, C and E Only

S90. Ans.(a)

Sol. Quantitative research is a systematic, empirical investigation of quantitative properties and phenomena and their relationships. It uses numerical data to quantify and analyze problems, and it typically involves a deductive approach.

All of the following factors must be taken into account in quantitative research:

Measurement: Quantitative research must use reliable and valid measurement instruments to collect data. Causality: Quantitative research should be designed to establish causal relationships between variables. Replication: Quantitative research studies should be able to be replicated by other researchers to verify the findings.

S91. Ans.(b)

Sol. Covert research in ethnography is a controversial method that involves collecting data about people without their knowledge or consent. This type of research raises several ethical concerns, including:

Informed consent: Participants in covert research do not have the opportunity to provide informed consent to participate in the study. This is a violation of their basic right to autonomy and self-determination.

Privacy: Covert research invades the privacy of participants. Researchers are essentially spying on people without their permission, which can be a deeply unsettling and disrespectful act.

Potential for harm: Covert research can have negative consequences for participants, both emotional and psychological. For example, participants may feel betrayed or violated when they find out that they have been secretly studied.

Trust: Covert research erodes trust between researchers and the communities they study. When people find out that they have been deceived, they may be less willing to participate in future research and may lose faith in the research community.

Person issues: Covert research may not be appropriate for research on personal or sensitive topics. However, it is not inherently unethical to study people without their knowledge or consent.

Political issues: Covert research may be used to study political movements or groups. However, this does not necessarily make it unethical. Researchers should always weigh the potential benefits of the research against the potential risks to participants.

Historical issues: Covert research may be used to study historical events or cultures. However, this does not necessarily make it unethical. Researchers should always be careful to respect the privacy and wellbeing of participants, even if they are no longer living.

S92. Ans.(b)

Sol. Surveying the sample audience can be done through the use of ICT. Google forms, emails, social networking sites, etc. can be used to obtain information from our sample audience. Surveying through the help of ICT saves time, cost, and helps us reach a comparatively larger sample audience.

Analysing data with computers is among the most widespread uses of information and communication technology in research.





A citation index is an ordered list of cited articles along with a list of citing articles. The cited article is identified as the reference and the citing article as the source. The index is prepared to utilize the association of ideas existing between the cited and the citing articles, as the fact is that whenever a recent paper cites a previous paper there always exists a relation of ideas, between the two papers. Citation indexing provides subjects access to bibliographic records in an indirect but powerful manner.

S93. Ans.(a)

Sol. When the null hypothesis is true and you reject it, you make a type I error.

There are two types of errors in hypothesis testing. They are Type 1 and Type 2 errors.

When a researcher rejects the null hypothesis (Ho) in their study and formulates an alternative hypothesis (H1), the type of error that is likely to occur is:

(a) Type I error.

Type I error, also known as a "false positive," happens when the researcher incorrectly rejects a true null hypothesis. In this case, the researcher concludes that there is a significant effect or relationship when, in fact, there is none. It is associated with making a wrong claim of significance or drawing incorrect conclusions from the data.

Option (b) Type II error occurs when the researcher fails to reject a false null hypothesis, which means they fail to detect a real effect or relationship that exists in the population.

S94. Ans.(d)

Sol. Online surveys are convenient for respondents, as they can be completed quickly and easily from any location with internet access. However, they may be subject to response bias, as not all respondents may have equal access to the survey. Online surveys may also have lower response rates than other survey methods, and the lack of control over the survey environment may introduce additional sources of bias.

Information Booster

Online surveys offer several advantages in survey research. They provide a cost-effective and efficient method for data collection, reaching a large and diverse participant pool. Online surveys offer flexibility in terms of timing and location, allowing participants to respond at their convenience. They also enable automated data entry and analysis, reducing manual effort. Additionally, online surveys can maintain respondent anonymity, encouraging more honest and accurate responses. Overall, online surveys offer convenience, cost-efficiency, and streamlined data collection and analysis processes.

S95. Ans.(d)

Sol. The purpose of hypothesis testing in hypothetico-deductive research is (d) to evaluate the accuracy of proposed hypotheses. Hypothesis testing is a fundamental part of the scientific method and plays a crucial role in confirming or refuting hypotheses based on empirical evidence. In hypothetico-deductive research, researchers propose a hypothesis or a set of hypotheses based on existing theories or observations. These hypotheses are then tested using empirical data collected through experiments, surveys, or other research methods. The objective is to assess whether the evidence supports or contradicts the proposed hypotheses, allowing researchers to draw conclusions about the relationships between variables or phenomena under investigation.





S96. Ans.(c)

Sol. The role of reflection in action research is (c) assessing the effectiveness of interventions. Reflection is a critical component of the action research process, as it allows researchers and practitioners to carefully examine and evaluate the outcomes and impact of their interventions or actions. Through reflection, researchers can analyze and interpret the data and observations gathered during the research process. They can assess whether the interventions implemented have achieved the desired goals and objectives, and identify any potential areas for improvement or modification. Reflection helps researchers gain insights into the effectiveness of their actions and make informed decisions about future steps or interventions.

S97. Ans.(a)

Sol. An extraneous variable is also known as an artifact (option a). An artifact refers to any unintended variable that can affect the results of a study. These variables can arise due to various factors such as measurement error, confounding variables, or flaws in the research design. Researchers must identify and address artifacts to ensure the accuracy and validity of their findings.

S98. Ans.(d)

Sol. Independent verification of a research effort is known as replication. Replication involves conducting the same study or experiment again, using the same methods and procedures, to see if the same results can be obtained. It is an important aspect of scientific research as it helps to ensure the validity and reliability of findings. Replication allows other researchers to test and validate the original study's results, which enhances the credibility and generalizability of the research. By independently replicating studies, the scientific community can build upon previous findings and gain a better understanding of the phenomenon being studied.

S99. Ans.(a)

Sol. The phenomenon described, where subjects in a control group may work hard to excel against the experimental group, is known as compensatory rivalry. It occurs when individuals or groups who are aware of being in a control condition strive to compensate for their lack of experimental treatment by putting in extra effort or trying to outperform the experimental group. This behavior can arise due to various reasons, such as a desire to prove themselves or a belief that they should achieve comparable results despite not receiving the experimental intervention. Compensatory rivalry can potentially introduce confounding factors in research studies and impact the interpretation of results.

S100. Ans.(c)

Sol. The name of the score that a student would get if the measurements were completely accurate and error-free is the true score. It represents the hypothetical or ideal score that reflects the student's actual ability, knowledge, or performance without any measurement errors. However, in reality, it is often not possible to measure with absolute precision, and various sources of error can affect the observed scores. The true score is a theoretical construct used in educational and psychological measurement to understand and estimate the extent to which observed scores reflect the underlying true scores.

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