Chapter 2: Scientific investigation

1. 'Rigor' related to scientific investigation refers, amongst others, to:
a. The probability that our estimations are correct.
b. The idea that a simple model that explains a certain phenomenon has preference over a complex model.
c. The fact that findings are generalizable.
*d. The fact that a study has a good theoretical base.

2. 'Confidence', as a characteristic of scientific investigation, refers to:
*a. The probability that our estimations are correct.
b. The idea that a simple model that explains a certain phenomenon has preference over a complex model.
c. The fact that findings are generalizable.
d. The fact that an investigation has a clear theoretical foundation.

3. Scientific investigation is characterized by a good theoretical base and a sound methodological design. These characteristics are both related to the _____ of the investigation.
*a. Rigor.
b. Precision and confidence.
c. Objectivity.
d. Parsimony.

4. An inductive investigation starts with an observation of empirical data.
*a. T
b. F

5. A deductive investigation is based on theoretically logical reasoning.
*a. T
b. F

6. Parsimony refers to:
a. The probability that our estimations are correct.
*b. The idea that a simple model explaining a certain phenomenon is preferred to a complex model.
c. The fact that findings are generalizable.
d. The fact that an investigation has a clear theoretical base.

7. As in the hypothetico-deductive studies, hypotheses can be developed in case studies as well.
*a. T
b. F

8. Case studies are usually qualitative in nature.
*a. T
b. F

9. In the hypothetico-deductive method the formulation, foundation and testing of hypotheses play an important role.
*a. T

b. F

10. Deduction is the process of drawing conclusions based on (an interpretation of) the results of data-analysis.
*a. T
b. F

11. Confidence refers to the closeness of the findings to “reality” based on a sample.
a. T
*b. F

12. It is not always possible to meet all the hallmarks of science in full. Comparability, consistency, and wide generalizability are often difficult to obtain in research.
*a. T
b. F

13. Which of the following is a hierarchical listing of the hypothetico-deductive research method?
*a. Identify a broad problem area - Define the problem statement - Develop hypotheses - Determine measures - Data collection - Data analysis - Interpretation of data
b. Identify a broad problem area - Define the problem statement - Determine measures - Data collection - Develop hypotheses - Data analysis - Interpretation of data
c. Define the problem statement - Identify a broad problem area - Determine measures - Develop hypotheses - Data collection - Data analysis - Interpretation of data
d. Identify a broad problem area - Develop hypotheses - Determine measures - Data collection - Data analysis - Interpretation of data

14. A hypothesis is falsifiable if it is possible to disprove the hypothesis.
*a. T
b. F

15. Both theory generation (induction) and theory testing (deduction) are essential parts of the research process.
*a. T
b. F

16. Inductive processes are more often used in causal and quantitative studies, whereas deductive research processes are regularly used in exploratory and qualitative studies.
a. T
*b. F

17. Action research involves in-depth, contextual analyses of similar situations in other organizations, where the nature and definition of the problem happen to be the same as experienced in the current situation.
a. T
*b. F

18. Hypothesis testing is inductive in nature because we test if a general theory is capable of explaining a particular problem.
a. T
*b. F

19. According to Karl Popper it is not possible to 'prove' a hypothesis by means of induction, because no amount of evidence assures us that contrary evidence will not be found.
*a. T
b. F

20. Analyses of both quantitative and qualitative data can be done to determine if certain conjectures are substantiated.
*a. T
b. F

21. A scientific hypothesis must be testable and falsifiable.
*a. T
b. F

22. Simplicity in explaining the phenomena or problems that occur, and in generating solutions for the problems, is always preferred to complex research frameworks that consider an unmanageable number of factors.
*a. T
b. F

23. A researcher who observes individual phenomena, and on this basis attempts to arrive at general conclusions, works inductively.
*a. T
b. F