Second Term Exam of Research Methodology (M1 DID) - 15/05/2024: Answer Key

Fill in the gaps below with the appropriate terms.

1. Failure to establish temporal **sequencing** is a possible reason for inferring causality rather than **reverse causality**. An example of the latter is **one may be tempted to say that low smoking causes depression, but another plausible explanation is that depression make people resort to smoking**. (0.5 pt.) x 2 + 1 pt.
2. The post **hoc fallacy** is the assumption that because one event preceded the other, they must be causally related. (0.5 pt.)
3. If intelligence is a relevant extraneous variable, in a study relating X to Y, but is not possible to control via some usual means, then it could be added to the research as another independent variable, aka the **moderator variable**. (0.5 pt.)
4. The higher the coefficient of correlation between two variables, the more accurate we can **predict** one based on the other in the future. (0.5 pt.)
5. In a **retroactive ex post facto research**, the dependent variable is antecedent, and the researcher seeks to discover the independent variables that might have contributed to the outcome. (0.5 pt.)
6. In a cohort study, **different** members of a cohort are included each time. (0.5 pt.)
7. It is **impractical** to randomly assign students to treatments in a school where instructional practices have already been established. (0.5 pt.)
8. Unlike **experimental research**, the participants in causal-comparative research already belong to groups based on their past experiences. (0.5 pt.)
9. With the exception of **random assignment**, ex post facto researchers use the same controls for extraneous variables as those used in experimental research. These include **matching**, **holding a variable constant**, **comparing homogeneous subgroups**, and statistical controls such as the use of **analysis of covariance**. (0.5 pt.) x 5
10. **Consistency** of measurement, in other words its **reliability**, or absence thereof, can be assessed by calculating the coefficient of correlation. (0.5 pt.) x 2
11. If one wants to use **matching** to make sure that participants who have been abused are similar in family income to those who have not, information on family income must also be obtained. (0.5 pt.)

12. Pearson's coefficient of correlation is used to quantify the relationship between two **continuous** or **discrete** quantitative variables. (0.5 pt.) x 2
13. In a correlational research investigating the relationship between a couple of learners' attributes, two **scores** are needed for each **learner** to determine the **coefficient of correlation**. (0.5 pt.) x 3
14. Magnitude interpretations of correlation coefficients alone are sometimes misleading. Therefore, to interpret the correlation, you need to know the **sample size** on which it is based and the **magnitude** of other correlations of the same variables in other studies. (0.5 pt.) x 2
15. **Multiple regression** uses a number of independent variables to predict a single dependent variable. (0.5 pt.)
16. The correlation between ice cream sales and drowning deaths during summer is an example of a **spurious relationship**. (0.5 pt.)
17. The coefficient of determination equals: **Pearson's correlation coefficient squared (r^2)**. (0.5 pt.)
18. The major purpose of all surveys is to describe the **characteristics** of a population. (0.5 pt.)
19. Causal-comparative research attempts to determine the **cause** or **consequences** of differences that already exist between or among groups of individuals. (0.5 pt.) x 2
20. In contrast to experimental research which examines differences between groups in **contrived** settings, ex post facto research examines differences between **natural** groups. (0.5 pt.) x 2
21. As in correlational studies, relationships can be identified in a causal-comparative study, but **causation** cannot be fully established. (0.5 pt.)
22. Two major weaknesses exist in causal-comparative research, **lack of randomization** and **inability to manipulate an independent variable**. (0.5 pt.) x 2
23. Ex post facto research and correlational research differ in terms of: **1) the nature of the relationship studied** (0.25 pt.), **cause-and-effect** (0.25 pt.) vs. **associative correspondingly** (0.25 pt.), and 2) **research design** (0.25 pt.). **Design is either proactive (grouping subjects on the basis of the IV and compares them on measurers of the DV)** (0.25 pt.) or **retroactive (seeking possible antecedent IVs for a preexisting DV. In correlational research**, **it focuses on gathering data on two (or more) measures from a single group of subjects and correlates between their values** (0.25 pt.).