Behavioral Research and Experimental Design
Assignment 1

Deadline: 26 August, 2023 (2359 Hours)

1. The following projects were created by students who took "BRED" last year. For these experiments:

   (a) State the null hypothesis. [1M]
   (b) Identify the extraneous variables that may have been overlooked by the experimenters. Justify your claims appropriately. [2M]

   Projects:

   (a) An analysis of Conservatism and the Involvement of Nationalism
   `https://iiitaphyd-my.sharepoint.com/:p:/g/personal/pranoy_`
   `j_research_iiit_ac_in/EUCsMD3zOiZDs-DdzyNKBmQBzfu6L6i5w7mhpIqtegMsFg?`
   `e=WRkgtN&nav=eyJzSWQiOjMxMiwiYOlkIjo1MDMwNDczMTJ9`

   (b) Effects of music and emotion on creativity
   `https://www.canva.com/design/DAFSLvAOqiA/BVKjeIP-ltstjCsx6wxVug/`
   `view?utm_content=DAFSLvAOqiA&utm_campaign=designshare&utm_`
   `medium=link&utm_source=publishsharelink`

2. Give an example of a research question wherein you may need to combine elements of Quantitative and Qualitative research. What are the advantages of using such an approach? [2M]

3. Look at the following list of experiments:

   (a) To study the social interactions within a remote indigenous tribe, Dora the anthropologist decides to live among the tribe members for an extended period, observing their daily routines, rituals, and interactions. By participating in their activities and conducting interviews, Dora gains deep insights into the tribe's cultural practices and social dynamics.

   (b) Sttinger, the energy drink company, is testing a new formula for their all new drink that allows Engineering students to complete their BRED assignment without feeling sleepy. They randomly assign participants into two groups: one group receives the new Sttinger, while

the other group receives a placebo (the original Sttinger). After a period of time, they measure both the groups by conducting certain experiments, all in an effort to determine if their new formula indeed works (and will be the new hot-selling item at BBC).

(c) Flabbergasted by the overdependence of her friends on the all new Sttinger energy drink, Dora decides that she is done studying the remote indigenous tribe, and comes back to campus to study the relationship between hours of sleep and academic performance. She collects data from a sample of students by asking them about their average hours of sleep per night and their CGPA. By analyzing this data, Dora identifies a correlation between higher amounts of sleep and better academic performance. However, Dora's study cannot definitively conclude that more sleep directly causes better grades, as other variables (like study habits) could also be influencing this relationship.

For each of the above mentioned experiments:

(a) Identify the Independent and Dependent variables. [3M]

(b) Identify the extraneous variables and classify them as either Random, Constant, or Confounding. [3M]

(c) Identify the setting (Type of experiment: True, Quasi-Controlled, Field, Non-Experiment) [3M]

(d) Determine the conditions/groups for each of the experiments. If applicable, identify whether it's an unrelated or related design. Aptly justify your claims. [3M]

4. Refer to this paper (`https://rb.gy/py9uw`) to answer the questions that follow:

(a) Identify the kind of experiment (true, natural, field) conducted. [1M]

(b) How can you take this study from lab to land? What are the pros and cons? [2M]