

2004 AP[®] PSYCHOLOGY FREE-RESPONSE QUESTIONS

PSYCHOLOGY

SECTION II

Time—50 minutes

Percent of total grade— $33\frac{1}{3}$

Directions: You have 50 minutes to answer BOTH of the following questions. It is not enough to answer a question by merely listing facts. You should present a cogent argument based on your critical analysis of the questions posed, using appropriate psychological terminology.

1. Dr. Franklin investigated the relationship between stress and physical illness. She persuaded a high school principal to require all female athletes in the school to participate in her study. She explained the purpose of her research to the athletes and asked them to use a standard form to rate the severity of their stress over the last six months. More than 250 athletes completed the form. Then Dr. Franklin analyzed the forms returned by the first 100 athletes. She requested the attendance records from the nurse's office for each of those athletes to verify the number of days absent due to illness during the same six-month period. In the debriefing summary that Dr. Franklin sent to the 100 athletes after she completed the study, she stated that athletes who reported more stress also experienced more frequent illness. Dr. Franklin concluded that stress causes physical illness.
 - Identify the research method used by Dr. Franklin.
 - Describe the operational definitions of the TWO key variables that Dr. Franklin used in the study.
 - Based on the information provided, describe ONE appropriate and ONE inappropriate ethical feature of the study.
 - Identify ONE statistical technique that Dr. Franklin could use to represent the relationship between the variables in the study.
 - Describe TWO aspects of research design that weaken the validity of Dr. Franklin's conclusion that stress causes physical illness.

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2. Time is an important variable in many psychological concepts. Describe a specific example that clearly demonstrates an understanding of each of the following concepts and how it relates to or is affected by time. Use a different example for each concept.
- Critical period
 - Fluid intelligence
 - Group polarization
 - James-Lange theory of emotion
 - Presentation of the conditioned stimulus (CS) and unconditioned stimulus (UCS) in classical conditioning
 - Refractory period in neural firing
 - Sound localization
 - Spontaneous recovery

END OF EXAMINATION

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Question 1

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General Issues

1. Acceptable answers must include sentences (subject/verb): no stand-alone pictures or outlines.
2. You may establish which point is being discussed by the structure of the essay if it is written in order of the questions asked.
3. A point once earned cannot be lost by a later wrong statement unless immediately contradicted.

POINT 1: Research Method

- correlation
- survey
- questionnaire

NOTES: Ignore use of the word "experiment" as a synonym for study. "In this experiment, Dr. Franklin used a survey" counts. However, the specific phrase "correlational experiment" is a direct contradiction and will not be counted.

Don't Score:

- "experiment" as the method ("Dr. Franklin conducted an experiment that used surveys.")
- longitudinal study
- case study
- observational study

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Question 1 (cont'd.)

POINT 2: Operational Definition of Stress

- stress severity rating
- stress questionnaire
- stress score
- self-report of stress ("self-report" implies a survey was used)

NOTES: a) The operational definition requires identification of the method by which stress was measured (i.e., reference to the stress instrument used by Franklin).

b) A good operational definition of stress can use the exact language from the question.

Don't Score:

- "stress," "stress level," or "amount of stress"

POINT 3: Operational Definition of Illness

- number of days absent (don't need to specify "due to illness" or "six-month period")
- measured from attendance records

NOTE: A good operational definition of illness can use the exact language from the question.

Don't Score:

- "number of days sick" (illness wasn't directly measured, attendance was)
- procedures (e.g., "asked when they were sick")
- definition of illness (can't just describe illness or list symptoms)

POINT 4: Appropriate Ethical Characteristic (*must be based on information provided*)

- shared statement of purpose with participants
- debriefed participants

Don't Score:

- ethical practices not mentioned in question (e.g., providing confidentiality, getting IRB approval)

POINT 5: Inappropriate Ethical Characteristic (*must be based on information provided*)

- debriefed only some (100 of 250) participants (can't get both points 4 & 5 for saying "only some debriefed")
- were forced to participate (required by principal) / weren't allowed to quit
- no consent (student or parent)
- didn't get participant's permission to look at attendance records (invasion of privacy)

Don't score:

- poor design characteristics (e.g., "used only 100 when she could have used 250")
- did not use an IRB procedure (does not restrict answer to details provided in the question)

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Question 1 (cont'd.)

POINT 6: Statistical Technique

- calculate the correlation
- correlation coefficient
- scatter plot / correlation graph (“graphing stress on one axis and absences on the other”)
- calculate regression line

Don't score:

- analysis of variance, t test, z score, chi square test, inferential statistics

POINTS 7 and 8: Two Design Features that Weaken the Conclusion

Two parts required for each point: Identifying the problem and saying how or why it is a weakness. The two features cannot be the same issue (both points can't come from same bullet below).

- **causation** is not established
 - correlation is not causation (“why” implied) NOTE: can be imbedded in point 6, but not in others
 - direction of cause could be reversed (“illness could cause stress”)
 - 3rd variable: Illness could be caused by a variable other than stress
 - “illness could be caused by another variable that Franklin didn't measure”
 - example of a 3rd variable that affects the health of all participants, not only particular individuals: “absences could have been caused by the fear of violence in the school”
 - Don't score: “a student who plays soccer has more stress than others”
- testing only girls (or athletes, high school students) limits ability to **generalize** or is not **representative**
- took only the first 100 respondents (sample problem), so didn't have a **random sample**
- should have used more precise measures of stress or illness to improve the **operational definition** (“the illness measure is bad because absences may be due to things other than illness”)
- **response bias** (specified problem tied to “why” of response bias)
 - “Franklin told participants about the research before she collected data, biasing the results.”
 - “Students might lie about their stress, producing inaccurate data.”
 - Surveys, in general, are open to social desirability (trying to look good), biasing responses.

Don't Score:

- “no random assignment”
- “boys weren't allowed to participate” without link to generalization or representativeness
- “sample size too small”
- can't just disagree with Dr. Franklin's conclusion--must identify design problem (e.g., “can't conclude that stress causes physical illness because it is not an experiment” scores only with underlined portion)