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Name TestBanks Chapter 1 Process of Science: Java Report
Description Question pool for TestBanks Chapter 1 Process of Science: Java Report
Instructions

Modify

Add Question Here

Question 1 **Multiple Choice** **0 points** Modify Remove

Question
A hypothesis is a statement that can be

Answer
- changed throughout the experiment.
- avidly accepted by scientists.
- tested and proven true.
- ✓ tested and proven false.
- proceeds a theory.

Add Question Here

Question 2 **Multiple Choice** **0 points** Modify Remove

Question
Where are the most reliable scientific results published?

Answer
- In the daily news
- In science magazines
- In science journals
- On scientific web sites
- ✓ In peer reviewed media sources

Add Question Here

Question 3 **Multiple Choice** **0 points** Modify Remove

Question
In a scientific study evaluating the beneficial effects of caffeine on the elderly, what would be the best subjects to test?

Answer
- ✓ Elderly men and women
- Elderly women
- Pregnant women
- Elderly men
- Teenagers

Add Question Here

Question 4 **Multiple Choice** **0 points** Modify Remove

Question
Studies involving the benefits or risks of drinking coffee may be obscured by

Answer
- side effects of caffeine.
- how the coffee was roasted or processed.
- other chemicals in coffee.
- the age of the people studied.
- ✓ All of the above

Add Question Here

Question 5 **Multiple Choice** **0 points** Modify Remove

Question
Studies involving coffee drinking have shown

Answer
- A link to pancreatic cancer.
- No link to pancreatic cancer.
- A link to infertility.
- A lowering of the incidence of ovarian cancer.
- ✓ All of the above

Add Question Here

Question 6 **Essay** **0 points** Modify Remove

Question
Two studies were conducted to determine if a new drug was effective at reducing tumor size in patients with lung cancer. One study examined men and found that the drug reduced tumor size by 45%, while the other study, conducted on women, concluded the drug had no effect. Is it possible that the results of both studies are correct? Why or why not?

Answer The results of both studies may be correct because there may be differences in how the drugs affect men compared to women.

Add Question Here

Question 7 **Essay** **0 points** Modify Remove

Question
Imagine that you read a study of the effects of exercise on the prevalence of heart disease in women ages 35 to 65. Although you believe the experiment was carried out in an appropriate manner, you still do not believe the results. You decide to conduct your own study to see for yourself. To determine if the results of the first study are valid, would you want to do everything the same way as the first study or would you change several of the variables, such as studying men, or looking at different age groups? Explain your choice, and explain the consequences of the other choice.

Answer To be most comparable, you would conduct your new study in the exact same manner as the previous study. If you were to change any of the variables, then the results might change as well; thus, you would not be able to compare your new results to the first study.

Add Question Here

Question 8 **Essay** **0 points** Modify Remove

Question
Two researchers wish to examine the effect of caffeine on alertness. One researcher has the participants drink a cup of coffee with 100 mg of caffeine, while the other researcher has the participants take a capsule with 100 mg of caffeine. In all other respects, these two studies are identical. Which method do you think will answer the question best? Why? Are there any complicating factors that could compromise the results of one of the studies?

Answer The study in which participants are given caffeine in pill form will best answer the question about the effect of caffeine on alertness. Even though the amounts of caffeine are equal, there could be other compounds in the coffee that could influence the results.

Add Question Here

Question 9 **Multiple Choice** **0 points** Modify Remove

Question
Two studies were carried out to determine if children in daycare got more ear infections than children who stayed at home. The first study compared ear infection rates in 50 Canadian girls ages 1 to 2, half of whom attended daycare and half of whom stayed home. The second study compared ear infection rates in 1000 Swedish boys ages 3 to 4, half of whom attended daycare and half of whom stayed home. The results of these two studies differed greatly. Which of the following is LEAST likely to be the cause of such differences?

Answer
- Different genders
- ✓ Different mothers
- Different ages
- Different sample sizes
- Different countries

Add Question Here

Question 10 **Multiple Choice** **0 points** Modify Remove

Question
What factors may influence the outcome of an experiment, such as the caffeine study you read about in your textbook?

Answer
- The number of people involved in the study
- The demographics of the test subjects (i.e., age, living conditions, etc.)
- The length of time the study was done
- The way individuals are chosen for the study
- ✓ All of the above

Add Question Here

Question 11 **Multiple Choice** **0 points** Modify Remove

Question
Would it be possible for a scientist to bias a scientific study?

Answer
- No, there are so many checks and balances outside of the scientists' control that it's impossible to show bias in a scientific study.
- No, because all scientific experiments are designed to be fair.
- Yes, if the scientist used a large number of test subjects.
- ✓ Yes, if the scientist chose specific individuals to include in the study.
- None of the above

Add Question Here

Question 12 **Essay** **0 points** Modify Remove

Question
How can two studies on the same topic have conflicting conclusions?

Answer There may be other factors that can influence the outcome of the study that were not considered in the experimental design.

Add Question Here

Question 13 **Multiple Choice** **0 points** Modify Remove

Question
An experiment was performed using 1000 non-smoking males ages 18 to 22. Which of the following experimental groups would most likely produce the most similar results?

Answer
- 800 non-smoking females ages 30 to 45
- 800 smoking males ages 30 to 45
- 1000 smoking females ages 25 to 40
- 1000 non-smoking makes ages 30 to 55
- ✓ 800 non-smoking males ages 20 to 25

Add Question Here

Question 14 **Essay** **0 points** Modify Remove

Question
Researchers ran three experiments using the following populations:
- 250 non-smoking men ages 18 to 25
- 500 smoking and non-smoking men and women ages 20 to 55
- 300 smoking women ages 45 to 60

Would you expect the results of these three experiments to be the same? Explain.

Answer No, because the three experimental groups were different in age, gender, and whether or not they smoked; so there are many different factors that may have had an effect on the results of the experiment.

Add Question Here

Question 15 **Essay** **0 points** Modify Remove

Question
You have been asked to review and summarize three experiments regarding caffeine consumption and cancer.
A. In experiment A, researchers looked at the incidence of colon cancer among 100 regular tea drinkers and 100 non-tea drinkers in Japan, all between the ages of 18 and 38, and found that tea drinkers had less colon cancer than non-tea drinkers.
B. In experiment B, researchers looked at the incidence of pancreatic cancer among 300 heavy drinkers of yerba mate (*Ilex paraguensis*, a tree whose leaves and stems contain high levels of caffeine), 300 moderate yerba mate drinkers, and 300 non-yerba mate drinkers in Argentina, all between the ages of 40 and 60. This study showed that heavy yerba mate drinkers had higher levels of pancreatic cancer than moderate yerba mate drinkers, and moderate yerba mate drinkers had higher levels than non-drinkers.
C. In experiment C, researchers looked at the levels of prostate cancer among men ages 40 to 80 in the United States. The study examined 1000 coffee drinkers and 1000 non-coffee drinkers and found slightly lower levels of prostate cancer among the coffee-drinking men.

How do you summarize these experiments that have varying results? Are some of them wrong?

Answer The three experiments looked at three different types of cancer, three different populations from three different countries, and three different plant sources of caffeine. It would therefore be illogical to think they would have similar results. While we like to speak of "cancer" as if it was a single disease, it is in fact quite variable. All of these results may be quite accurate, but all are narrow in scope; so we can't make any general conclusions regarding caffeine and cancer from these results.

Add Question Here

Question 16 **Multiple Choice** **0 points** Modify Remove

Question
The scientific process from beginning to end can be outlined as

Answer
- test, hypothesize, analyze, and conclude.
- ✓ observe, hypothesize, test, analyze, and conclude.
- observe, question, test, analyze, and conclude.
- hypothesize, test, analyze, and conclude.
- observe text, hypothesize, analyze and conclude.

Add Question Here

Question 17 **Multiple Choice** **0 points** Modify Remove

Question
Observations should not include

Answer
- peer-reviewed scientific literature.
- previous data generated.
- observations about past work.
- ✓ anecdotal evidence.
- other people's data.

Add Question Here

Question 18 **Multiple Choice** **0 points** Modify Remove

Question
A hypothesis can be everything EXCEPT

Answer
- ✓ peer reviewed.
- not supported.
- supported.
- falsifiable.
- testable.

Add Question Here

Question 19 **Multiple Choice** **0 points** Modify Remove

Question
All of the following are true of a scientific hypothesis EXCEPT

Answer
- ✓ it is an opinion.
- it is an educated guess to explain an observation.
- there must be a way to test the hypothesis.
- there must exist a possibility of obtaining a result that could prove your hypothesis wrong.
- there must exist a possibility of obtaining a result that could support your hypothesis.

Add Question Here

Question 20 **Multiple Choice** **0 points** Modify Remove

Question
Which of the following places the steps of the scientific process in the correct order?

Answer
- Experiment→questions→hypothesis→read literature→conclusions
- Questions→experiment→read literature→hypothesis→conclusions
- Read literature→experiment→questions→conclusion→hypothesis
- ✓ Questions→read literature→hypothesis→experiment→conclusions
- Read literature→questions→experiment→hypothesis→conclusions

Add Question Here

Question 21 **Essay** **0 points** Modify Remove

Question
Why can't science answer questions about the existence of a supernatural being?

Answer Science requires a hypothesis that is testable and falsifiable. There is no way to test the existence of a supernatural being, nor is it possible to prove that something does not exist.

Add Question Here

Question 22 **Essay** **0 points** Modify Remove

Question
A scientific hypothesis must have two very important features. What are they?

Answer A scientific hypothesis must be testable and falsifiable.

Add Question Here

Question 23 **Essay** **0 points** Modify Remove

Question
What does it mean to say that a scientific study has undergone “peer review”? Why is this important?

Answer When a study has undergone peer review it means that other scientists have examined the study to make sure the experiment was carried out properly and that the conclusions are appropriate. This is important to weed out studies with questionable methods and results to ensure scientific accuracy and reliability.

Add Question Here

Question 24 **Essay** **0 points** Modify Remove

Question
Why do scientists say that a hypothesis is “supported” and never say that a hypothesis has been “proven”?

Answer Because it is impossible to test a hypothesis under every possible scenario, there is no way to “prove” a hypothesis. Thus, a hypothesis can only be supported.

Add Question Here

Question 25 **Multiple Choice** **0 points** Modify Remove

Question
What are the steps used in the process of a scientific study?

Answer
✓ Making initial observations that generate questions, studying the literature, generating hypotheses that are both testable and falsifiable, testing the hypothesis with experiments and analyzing the data, and making conclusions that are supported by data
Generating hypotheses, conducting experiments, researching literature, making conclusions supported by the literature, and analyzing data
Making initial observations that generate questions, generating hypotheses, studying the literature, conducting experiments based on literature, and making conclusions supported by data
Generating hypotheses based on published literature, testing hypotheses, and making conclusions supported by data
None of the above

Add Question Here

Question 26 **Multiple Choice** **0 points** Modify Remove

Question
What is the first step in the scientific process?

Answer
Designing an experiment
Choosing test subjects
Peer review of your study
Analyzing your data
✓ Formulating a hypothesis

Add Question Here

Question 27 **Multiple Choice** **0 points** Modify Remove

Question
What is the importance of peer review in the scientific process?

Answer
It helps a scientist formulate a hypothesis
It helps a scientist choose test subjects
✓ It ensures that a study has been appropriately designed and correctly interpreted
It helps the scientist collect data
It is the first step in any scientific study

Add Question Here

Question 28 **Multiple Choice** **0 points** Modify Remove

Question
I notice that all the students in my class seem very drowsy 45 minutes into my class period. Knowing that it could not possibly be my lecture, I consider other factors such as the fact that my class is at 5pm and the sun is usually setting at that time of the day which I think may make people drowsy. What type of evidence am I collecting in making this observation?

Answer
Experimental
✓ Anecdotal
Peer reviewed
Coincidental
Untestable

Add Question Here

Question 29 **Multiple Choice** **0 points** Modify Remove

Question
What are the criteria for a good hypothesis?

Answer
It must be realistic.
It must have only one possible result.
It must be based on anecdotal evidence.
It must be based on peer reviewed journal articles.
✓ It must be testable and falsifiable.

Add Question Here

Question 30 **Multiple Choice** **0 points** Modify Remove

Question
Based on previous published data and some preliminary experiments done in my lab, I hypothesize that a drug called “shrinkase” will decrease the growth of a particular type of cancerous tumor. What is my next step in the scientific process?

Answer

Find people with that kind of tumor
Obtain a large supply of shrinkase
✓ Determine what my control and experimental groups will be
Submit my hypothesis for peer review
Analyze the results of my experiments

Add Question Here

Question 31 **Multiple Choice** **0 points** Modify Remove

Question
What conclusions can be drawn from a hypothesis?

Answer

If evidence supports the hypothesis, the hypothesis is considered scientific theory.
If evidence rejects the hypothesis, then it can be removed from the list of possible answers to the original question.
If data support the hypothesis, then it is accepted and further testing is not warranted.
If there is data to support the hypothesis, then it is accepted until further testing suggests otherwise.
✓ Both B and D

Add Question Here

Question 32 **Multiple Choice** **0 points** Modify Remove

Question
Evidence that is not based on systematic scientific study is known as ____ evidence.

Answer

empirical
causational
✓ anecdotal
logical
statistical

Add Question Here

Question 33 **Multiple Choice** **0 points** Modify Remove

Question
If the results of an experiment contradict the hypothesis, you _____ the hypothesis.

Answer

support
✓ falsify
prove
disprove
verify

Add Question Here

Question 34 **Multiple Choice** **0 points** Modify Remove

Question
Scientific journals send out potential articles to other scientists working in the same research area as the potential article, and those scientists make comments regarding the research. This is known as

Answer

jurisprudence.
peer rebuttal.
journalistic integrity.
journalistic license.
✓ peer review.

Add Question Here

Question 35 **Multiple Choice** **0 points** Modify Remove

Question
A hypothesis must be ____ and _____.

Answer

logical; verifiable
logical; falsifiable
testable; logical
irrefutable; testable
✓ testable; falsifiable

Add Question Here

Question 36 **Multiple Choice** **0 points** Modify Remove

Question
You have the following known facts: Smoking causes accumulation of materials in the lungs, thereby decreasing the lungs' oxygen absorbing capability. Long-term smoking causes more accumulation of materials in the lungs. Decreased lung capacity increases the workload of the heart. Which of the following hypotheses can you make from these observations?

Answer

People who never smoke never develop lung problems.
✓ Long-term smokers have poorer heart health than non-smokers.
New smokers have poorer heart health than long-term smokers.
Stopping smoking eliminates lung problems within two years.
Stopping smoking eliminates heart problems within two years.

Add Question Here

Question 37 **Essay** **0 points** Modify Remove

Question
A hypothesis is often called an educated guess. Why is it a guess and why is it educated?

Answer It is a guess because it is a possible answer to a question that has been formulated. It is educated because that question and the possible answer are both based on prior knowledge gained from previous observation and research.

Add Question Here

Question 38 **Essay** **0 points** Modify Remove

Question
What is peer review?

Answer Peer review is the process by which potential articles for scientific journals are reviewed by other scientists working in the same subject area as the authors of the article. Peer review helps ensure that poorly designed experiments' results are not published.

Add Question Here

Question 39 **Multiple Choice** **0 points** Modify Remove

Question
A controlled experiment describes

Answer
✓ having separate control and experimental groups.
precise measurements.
accurate and careful measurements.
more that one variable changing separately.
careful testing of the hypothesis.

Add Question Here

Question 40 **Multiple Choice** **0 points** Modify Remove

Question
In a controlled experiment, the control and experimental groups differ in

Answer
the environmental variable.
the controlled variable.
✓ the independent variable.
the dependent variable.
the result.

Add Question Here

Question 41 **Multiple Choice** **0 points** Modify Remove

Question
A placebo is given to

Answer
the dependent group.
✓ the control group.
the independent group.
the experimental group.
the variable group.

Add Question Here

Question 42 **Multiple Choice** **0 points** Modify Remove

Question
In an experiment, usually one factor changes which is the

Answer
placebo.
controlled variable.
coordinate variable.
✓ independent variable.
dependent variable.

Add Question Here

Question 43 **Multiple Choice** **0 points** Modify Remove

Question
Increasing a sample size:

Answer
✓ provides more reliable data.
increases likelihood of getting a positive result.
increases likelihood of getting a negative result.
provides better variables.
provides better controls.

Add Question Here

Question 44 **Multiple Choice** **0 points** Modify Remove

Question
In a clinical trial with 400 subjects, the most reliable results would be obtained if ____subjects were in the experimental group and ____in the control.

Answer
✓ 200; 200
300; 100
100; 300
350; 50
50; 350

Add Question Here

Question 45 **Essay** **0 points** Modify Remove

Question
To test the effectiveness of a new drug designed to improve concentration in children with hyperactivity disorder, a researcher divided 100 children with hyperactivity disorder into two groups of 50 children each. First, both groups received a test to determine the length of time they could study a word list before their attention wandered. Then, group 1 received the new drug while group 2 received a sugar pill. One hour later, both groups took the concentration test again.
A. Which group is the experimental group and which is the control group?
B. Why did group 2 receive a sugar pill instead of simply not taking anything at all?
C. What is the independent variable in this study?
D. What is the dependent variable in this study?

Answer
A. Group 1 is the experimental group; group 2 is the control group.
B. Group 2 received the sugar pill so that as many variables as possible would be the same between the two groups.
C. The independent variable is the drug.
D. The dependent variable is attention span.

Add Question Here

Question 46 **Multiple Choice** **0 points** Modify Remove

Question
A study is conducted to see if walking reduces joint stiffness in people suffering from arthritis of the knee. Half the participants are instructed to walk an additional 1 mile every day, while the other half are told to go about their normal daily routine with no additional exercise. In this study, the group that walks an extra mile every day is referred to as

Answer
the control group.
✓ the experimental group.
the placebo group.
the dependent group.
the independent group.

Add Question Here

Question 47 **Multiple Choice** **0 points** Modify Remove

Question
A study was conducted to determine if the growth rate of babies differs between babies that are bottle-fed and babies that are breast-fed. In this experiment, growth rate is referred to as

Answer
the controlled variable.
the experimental variable.
✓ the dependent variable.
the independent variable.
the placebo variable.

Add Question Here

Question 48 **Multiple Choice** **0 points** Modify Remove

Question
Two groups of people are given a drug that they are told will make them drowsy. However, only one group actually receives this drug, while the other group secretly receives a sugar pill. Strangely, both groups report feeling very tired 30 minutes later. The group receiving the sugar pill is said to be experiencing

Answer
the control effect.
the experimental effect.
the dependent effect.
the independent effect.
✓ the placebo effect.

Add Question Here

Question 49 **Essay** **0 points** Modify Remove

Question
What is a placebo treatment and why is it important in a properly designed experiment?

Answer A placebo treatment is a fake treatment given to the control group to mimic the experience of the experimental group. It is important to keep as many factors as possible identical between the experimental and control groups so that only the variable being studied is different. By doing this, you ensure that the result you observe is due to the experimental factor and not to any other unknown factor.

Add Question Here

Question 50 **Essay** **0 points** Modify Remove

Question
Describe the features of an experimental group versus a control group, for example, in an experiment whose hypothesis is “coffee improves memory.”

Answer The experimental group will contain subjects who are observed under the conditions being tested. In this case, experimental and control groups would both have their memories tested. The experimental group would be individuals who have had caffeinated coffee versus the control group, who would have had decaf coffee (no caffeine).

Add Question Here

Question 51 **Multiple Choice** **0 points** Modify Remove

Question
What is the importance of a placebo?

Answer
✓ It allows the researcher to treat control and experimental groups differently while allowing them to believe they are being treated the same.
It allows the researcher to treat control and experimental groups the same while allowing them to believe they are being treated differently.
It allows the researcher to use an experimental drug on more people.
It removes the need for a control group.
All of the above

Add Question Here

Question 52 **Multiple Choice** **0 points** Modify Remove

Question
In a well designed experiment the independent variable

Answer
✓ does not depend on another factor or condition.
changes from subject to subject randomly.
can never be manipulated by the researcher.
will depend on the dependent variable.
None of the

Add Question Here

Question 53 **Multiple Choice** **0 points** Modify Remove

Question
A scientific study looked at the effect of tanning beds on DNA, specifically DNA damage. The scientist took skin cells and exposed them to UV radiation (the type used in indoor tanning beds) for different lengths of time some for 1 minute, some for 5 minutes, some for 15 minutes, and some for 30 minutes. They then looked for signs of DNA damage and compared the results to cells that had never been exposed to UV light. What is the independent variable in this experiment?

Answer
- The skin cells
- The type of light
- ✓ The length of time the cells are exposed
- The untreated cells
- The amount of DNA damage

Add Question Here

Question 54 **Multiple Choice** **0 points** Modify Remove

Question
A scientific study looked at the effect of tanning beds on DNA, specifically DNA damage. The scientist took skin cells and exposed them to UV radiation (the type used in indoor tanning beds) for different lengths of time some for 1 minute, some for 5 minutes, some for 15 minutes, and some for 30 minutes. They then looked for signs of DNA damage and compared the results to cells that had never been exposed to UV light. What is the control in this experiment?

Answer
- The skin cells
- The type of light
- The length of time the cells are exposed
- ✓ The untreated cells
- The amount of DNA damage

Add Question Here

Question 55 **Multiple Choice** **0 points** Modify Remove

Question
A scientific study looked at the effect of tanning beds on DNA, specifically DNA damage. The scientist took skin cells and exposed them to UV radiation (the type used in indoor tanning beds) for different lengths of time some for 1 minute, some for 5 minutes, some for 15 minutes, and some for 30 minutes. They then looked for signs of DNA damage and compared the results to cells that had never been exposed to UV light. What is the independent variable in this experiment?

Answer
- The skin cells
- The type of light
- The length of time the cells are exposed
- The untreated cells
- ✓ The amount of DNA damage

Add Question Here

Question 56 **Multiple Choice** **0 points** Modify Remove

Question
In a well designed experiment the sample size

Answer
- ✓ is large enough to have a statistical significance.
- should not be very large, so the data can be more easily interpreted.
- should be as large as possible without regard to background, demographic, or any other factors.
- should be around one hundred.
- None of the above

Add Question Here

Question 57 **Multiple Choice** **0 points** Modify Remove

Question
Statistical significance

Answer
- is the degree of confidence you can have that your results are real versus due to chance.
- is more likely to be reliable if you have a large sample size versus a small sample size.
- is a requirement of the data from a well designed experiment.
- ✓ All of the above
- None of the above

Add Question Here

Question 58 **Multiple Choice** **0 points** Modify Remove

Question
In designing a scientific research project, the ideal control group should

Answer
- be identical to the placebo group.
- be identical to the experimental group but receive the placebo.
- ✓ receive the placebo and receive no experimental manipulation.
- be identical to the experimental group.
- be identical to the independent variable.

Add Question Here

Question 59 **Multiple Choice** **0 points** Modify Remove

Question
You finish a research project and submit your findings, in an article, to a journal for peer review. The reviewers decide that they do not think your experimental results were convincing enough to prove or disprove your hypothesis. What is your next step?

Answer
- Cry
- Formulate a new hypothesis that better fits your data
- ✓ Design and carry out more experiments to prove or disprove your hypothesis.
- Reanalyze your data

Fix your results so they better fit your hypothesis

Add Question Here

Question 60 **Multiple Choice** **0 points** Modify Remove

Question
A controlled experiment

Answer
- must have a dependent variable.
- must have an independent variable.
- must be falsifiable.
- must be repeatable.
- ✓ All of the above

Add Question Here

Question 61 **Multiple Choice** **0 points** Modify Remove

Question
The steps of the scientific method, in order, are

Answer
- hypothesis, experiment, results, and conclusion.
- experiment, data, conclusion, and theory.
- ✓ data/observations, hypothesis, experiment, results, and conclusions.
- results, conclusion, hypothesis, and theory.
- theory, hypothesis, experiment, data, and conclusion.

Add Question Here

Question 62 **Essay** **0 points** Modify Remove

Question
You are running an analysis on different food items to test for the presence of the major biological macromolecules starch, proteins, and lipids. For each test you examine four food items and distilled water. What is the role of the distilled water?

Answer It is a control.

Add Question Here

Question 63 **Essay** **0 points** Modify Remove

Question
Numerous studies have shown that the more often a person performs a workout routine that increases heart rate, the better their overall heart health is. You have two groups of individuals who are willing to participate in a heart-health experiment. Fifty are non-smoking males, ages 18 to 22, who work out three times/week. Fifty are non-smoking males, ages 18 to 22, who do not work out on a regular basis. In the experiment, they will step up and down on an 8-inch-high cinder block 120 times/minute for 3 minutes. Researchers will examine their heart rate before starting, immediately after they finish, and every minute after finishing until their heart rate returns to their original rate. Two common measures of heart health are the percentage increase in heart rate caused by exercise and the time the heart rate takes to return to the base rate. Based on these parameters, what is your hypothesis regarding the heart health and test performance of the two groups?

Answer The non-exercising group will have a greater increase in heart rate and a longer recovery time, indicating an overall lower level of heart health.

Add Question Here

Question 64 **Essay** **0 points** Modify Remove

Question
You are tasked with testing the following hypothesis: Left-handed people have better hand-eye coordination that right-handed people. Based on a review of literature, you have read that one common test of hand-eye coordination is measuring the percentage of times that someone can drop a coin into a small container from a height of 3 feet. To perform this experiment, you have a group of 25 left-handed males, 25 right-handed males, 25 left-handed females, and 25 right-handed females. Design an experiment to test your hypothesis and be sure to define your independent and dependent variables.

Answer Experimental design may vary but should include a gender and handedness balance. It is important that each individual has multiple attempts to drop the coin into the container. The dependent variable is the number of times each person is successful in getting the coin into the container. The independent variables are gender and handedness. The best experimental designs will also incorporate the concepts of participants' ages and heights.

Add Question Here

Question 65 **Essay** **0 points** Modify Remove

Question
You are performing a bacterial transformation where you are trying to transfer DNA that contains the gene for resistance to the antibiotic ampicillin into the bacterium *E. coli*. Ampicillin normally kills *E. coli*, but if you are successful in your transfer of the DNA, the *E. coli* will now be unaffected by ampicillin. *E. coli* grows best on Luria Broth agar plates. Giving a cold period and then a brief heat shock and a cold period have been shown to help bacteria cells take up pieces of DNA.

You take some cultures of *E. coli*, keep these on ice for 15 minutes, heat shock them for 90 seconds, then chill them on ice for 1 minute before putting them onto Luria Broth agar plates with ampicillin and Luria Broth plates without ampicillin. These bacteria should be killed by the plates with ampicillin.

You take some other cultures of *E. coli*, add cold calcium chloride, then add the new DNA, then keep these on ice for 15 minutes, heat shock them for 90 seconds, then chill them on ice for 1 minute before putting them onto Luria Broth agar plates that contain ampicillin and Luria Broth agar plates without ampicillin. If you successfully transferred the DNA, these bacteria should grow on the plates with ampicillin and the ones without ampicillin.

In this experiment, why were the colonies without the added DNA and the colonies with the added DNA treated the same way (15 minutes cold, then heat shock, then cold)?

Answer As a control to show that you handled both types of *E. coli* colonies the same way. Even though there was no DNA to be taken up by the one set of *E. coli*, if you had not handled them the same as the ones with DNA, you might conclude that the cold/heat/cold treatment conferred the ability to resist ampicillin.

Add Question Here

Question 66 **Multiple Choice** **0 points** Modify Remove

Question
Increasing sample size increases

Answer
- the control group.
- the experimental group.
- randomness.
- ✓ reliability of data.
- variation.

Add Question Here

Question 67 **Multiple Choice** **0 points** Modify Remove

Question
A significant result from a scientific study indicates

Answer
- a statistical error.
- it occurred by chance.
- a positive result.
- a negative result.
- ✓ a non-random result.

Add Question Here

Question 68 **Multiple Choice** **0 points** Modify Remove

Question
A positive correlation on a memory test and drinking coffee would show

Answer
- decreasing coffee consumption increases memory test score.
- ✓ increasing coffee consumption increases memory test score.
- decreasing coffee consumption decreases memory test score.
- increasing coffee consumption decreases memory test score.
- no change on memory test score with or without coffee.

Add Question Here

Question 69 **Multiple Choice** **0 points** Modify Remove

Question
You examine several studies on the effect of a new drug to treat diabetes. Which of the following would give you the most confidence in the results?

Answer
- One study with 50 people
- One study with 500 people
- One study with 1000 people
- Three studies done the same way, each with 50 people
- ✓ Three studies done the same way, each with 1000 people

Add Question Here

Question 70 **Essay** **0 points** Modify Remove

Question
Why does having a large sample size give more reliable results?

Answer The larger the sample size, the less likely the results are due to chance alone.

Add Question Here

Question 71 **Multiple Choice** **0 points** Modify Remove

Question
A large sample size is important for all of the following reasons EXCEPT

Answer
- large sample sizes reduce the possibility that results are due to chance alone.
- large sample sizes increase the likelihood of finding a statistically significant result.
- large sample sizes make the results more reliable.
- large sample sizes increase the accuracy of the results.
- ✓ large sample sizes increase the likelihood that a very rare result will be noticed.

Add Question Here

Question 72 **Multiple Choice** **0 points** Modify Remove

Question
Which sample group would give the most statistically significant data?

Answer
- ✓ Results from 10 individual mice tested once
- Results from one mouse tested 10 times
- Results from one pig
- Results from five pigs tested five times
- Results from ne mouse tested 100 times

Add Question Here

Question 73 **Multiple Choice** **0 points** Modify Remove

Question
Which of the following is not a scientific theory?

Answer
- Cells coming from pre-existing cells
- Einstein's relativity formulas
- ✓ Results from an experiment with 3000 subjects
- Evolution
- Hypotheses supported by a multitude of experiments

Add Question Here

Question 74 **Essay** **0 points** Modify Remove

Question
Explain why evolution is not “just a theory” with reference to evolution.

Answer Evolution has been supported by many experiments in many diverse fields. Fossils, comparative anatomy, biochemical, and biographical data support the theory of evolution by natural selection. Theories in science differ from the mainstream or colloquial interpretations, as scientific theories are based on results and conclusions from many experiments. Over time, supported hypotheses, backed by much data, become recognized as scientific theory.

Add Question Here

Question 75 **Multiple Choice** **0 points** Modify Remove

Question
Which is not an everyday theory?

Answer
- If you carry and umbrella it won't rain
- ✓ Evolution
- That the freezer is the best place for valuables
- That wearing bright clothes cheers one up
- An experiment using 3000 subjects

Add Question Here

Question 76 **Multiple Choice** **0 points** Modify Remove

Question
A small sample size

Answer
- will likely yield a high degree of statistical significance.
- is never accepted in any experiment.
- is usually a benefit to researchers.
- does not allow the use of dependent and independent variables.
- ✓ None of the above

Add Question Here

Question 77 **Multiple Choice** **0 points** Modify Remove

Question
What is/are the major factor(s) affecting the strength of a conclusion?

Answer
- Sample size
- Independent variable
- Dependent variable
- The type of study carried out
- ✓ Both A and D

Add Question Here

Question 78 **Multiple Choice** **0 points** Modify Remove

Question
I carried out a series of experiments testing the effect of caffeine on mice. I used two mice. I fed one mouse caffeinated water and fed the other plain water. I then measured the ability of the mice to find its way through a maze. I timed their progress. My results were exciting and conclusive, the caffeinated mouse found his way through the maze much more rapidly and accurately than the non-caffeinated mouse. I sent my results to a peer-reviewed journal but they rejected my paper. They said the results were not valid. Why?

Answer
- I should have let the mice go through the maze at different times.
- I should have given the mouse different amounts of caffeine.
- I didn't use the right form of caffeine.
- ✓ I didn't have enough mice in the study.
- None of the above

Add Question Here

Question 79 **Multiple Choice** **0 points** Modify Remove

Question
A study determining if caffeine enhances memory was done by two different researchers but with the exact same experimental design. Researcher A showed that in 25% of people, it affected memory; but researcher B showed that in 50% of people, it affected memory. Assume that the demographics of the subjects were the same (i.e., age, race, socioeconomic background. etc.). Further testing showed that researcher A's results were more accurate. Can you think of a reason their results would be so different if the conditions were the same, and why researcher A was more accurate?

Answer
- ✓ Researcher A had a larger sample size than researcher B.
- Researcher B had a larger sample size than researcher A.
- Researcher A had poor data collection.
- Researcher B did not use controls.
- None of the above

Add Question Here

Question 80 **Fill in the Blank** **0 points** Modify Remove

Question
Experiments with a small sample size are ____ likely to produce statistically significant results than experiments with a large sample size.

Answer less

Add Question Here

Question 81 **Multiple Choice** **0 points** Modify Remove

Question
You are reviewing the results of five similar experiments, but each had a different sample size. Which of the following experiments has the most reliable results?

Answer
- The experiment with a sample size of 10
- The experiment with a sample size of 100
- The experiment with a sample size of 1000

The experiment with a sample size of 10,000
✓ The experiment with a sample size of 100,000

Add Question Here

Question 82 **Essay** **0 points** Modify Remove

Question
You have two experiments to review. One looks at 1000 of the 1,000,000 rabbits in an area. The other study looks at 100 of the 100,000 wolves in an area. Which study is more statistically accurate?

Answer Neither, they both looked at 1 out of every 1000 individuals.

Add Question Here

Question 83 **Essay** **0 points** Modify Remove

Question
Explain the importance of sample size in experiments.

Answer Experiments performed with a small number of participants have a higher probability that their results can be attributed to the nature of the participants. The greater the number of participants, the greater the probability that the results cannot be attributed the chance.

Add Question Here

Question 84 **Multiple Choice** **0 points** Modify Remove

Question
Caffeine can

Answer
help enhance memory.
cause anxiety.
cause seizures.
increase urination.
✓ All of the above

Add Question Here

Question 85 **Multiple Choice** **0 points** Modify Remove

Question
Some side effects of caffeine are

Answer
vomiting.
fevers.
confusion.
✓ All of the above
None of the above

Add Question Here

Question 86 **Multiple Choice** **0 points** Modify Remove

Question
Drinking caffeinated beverages may do all EXCEPT

Answer
✓ lower blood pressure.
cause vomiting.
increase heart rate.
induce fever.
cause vision flashes.

Add Question Here

Question 87 **Essay** **0 points** Modify Remove

Question
What is the difference between a hypothesis and a theory?

Answer A hypothesis is an explanation that may or may not have undergone scientific testing, while a theory is a hypothesis that has undergone numerous tests over many years and has accumulated a large body of evidence in support of the explanation.

Add Question Here

Question 88 **Multiple Choice** **0 points** Modify Remove

Question
Which of the following is an example of an everyday theory?

Answer
Objects are attracted to one another by gravity.
✓ Broccoli tastes better than cauliflower.
All life forms are related to each other through common ancestry.
All living things are made of cells.
The universe was created from a large cosmic explosion.

Add Question Here

Question 89 **Multiple Choice** **0 points** Modify Remove

Question
A hypothesis is

Answer
an idea that has been rigorously tested and never been disproven.
an idea that has been rigorously tested and only been disproven a few times.
✓ an idea that can be tested and falsified.
an opinion.
an idea based on a person's experience or knowledge.

Add Question Here

Question 90 **Multiple Choice** **0 points** Modify Remove

Question
A scientific theory is

Answer ✓ a hypothesis that has been rigorously tested and never been disproven.
a hypothesis that has been rigorously tested and only been disproven a few times.
a hypothesis that has been tested at least five times.
an opinion.
an idea based on a person's experience or knowledge.

Add Question Here

Question 91 **Essay** **0 points** Modify Remove

Question
Does science ever prove a hypothesis or theory? Why or why not?

Answer Science never proves anything because no idea can be tested under every possible circumstance. Thus, the best science can do is rigorously test a hypothesis, and with rigorous testing comes increased support in favor of the hypothesis.

Add Question Here

Question 92 **Multiple Choice** **0 points** Modify Remove

Question
A scientific theory

Answer ✓ is a hypothesis that has been upheld by many experiments
is an uneducated guess
has not been tested
is an educated guess
can never be proven wrong

Add Question Here

Question 93 **Multiple Choice** **0 points** Modify Remove

Question
I observe that squirrels that live in the southeastern United States are much thinner than squirrels that live in the northeastern part of the country. I theorize that this is because the squirrels that live in the northeast have greater fat reserves for the winter months when food is scarce. Is this a scientific theory?

Answer
Yes, it is a good guess.
Yes, I am taking into consideration physiological reasons for their larger size, so it's scientific.
✓ No, it is just a hypothesis; it has not been proven to be true through experimentation or quantification.
No, it cannot be proven.
None of the above

Add Question Here

Question 94 **Multiple Choice** **0 points** Modify Remove

Question
An idea that has been examined numerous times and has never been falsified may be called a

Answer
✓ theory.
hypothesis.
conclusion.
conundrum.
ideology.

Add Question Here

Question 95 **Multiple Choice** **0 points** Modify Remove

Question
In everyday usage, the word “theory” is used to mean an untested idea. Which of the following scientific terms is most similar to the everyday usage of “theory?”

Answer
Concept
Conclusion
Observation
✓ Hypothesis
Theory

Add Question Here

Question 96 **Essay** **0 points** Modify Remove

Question
Define the meaning of the word “theory” in everyday usage and scientific usage and give two examples of each type of theory.

Answer In everyday usage, theory means an untested idea, but that is often based on observation; however it can also be used in the derogatory sense “just a theory.” (Examples will vary.) In scientific usage, theory means an idea that has been rigorously tested and repeatedly supported. (Examples may vary but may likely include the cell theory and theory of evolution.)

Add Question Here

Question 97 **Essay** **0 points** Modify Remove

Question
In several reported incidents, local school boards have insisted that biology texts have a stamp placed inside that states that “Evolution is a theory.” To their surprise, most science faculty have not objected to this language. Explain what each group meant by the statement that “Evolution is a theory.”

Answer In everyday usage, the word theory has come to mean “idea,” and often it is used to indicate an idea that is unlikely to be true. Thus, when school board members call evolution a theory, they are implying that it is untrue. However, when a scientist uses the word theory, it means a hypothesis that has been tested numerous times and has never been falsified. It is equivalent to a mathematician using the word “theorem.” So, the biology faculty could use the school boards' own language to support the theory of evolution when covering that in class, simply by defining the word theory in a scientific context.

Add Question Here

Question 98 **Essay** **0 points** Modify Remove

Question
When Darwin wrote *The Origin of Species*, was evolution considered a theory? Explain your answer.

Answer No, Darwin's work was the first to publish the concept of natural selection, and even though he came to his conclusions based on his education and observations, his ideas had not been thoroughly reviewed by other scientists. The term “theory” is only used after multiple reviews by multiple scientists over an extended period of time.

Add Question Here

Question 99 **Multiple Choice** **0 points** Modify Remove

Question
Scientific studies involving a subjectively assessed benefit (i.e., caffeine and enhanced memory recall) can be complicated by

Answer
- lack of observations.
- improper controls.
- poor subject selection.
- side effects from the drug.
- ✓ All of the above

Add Question Here

Question 100 **Multiple Choice** **0 points** Modify Remove

Question
A correlation in a scientific study indicates

Answer
- insufficient data.
- a cause and effect between variables.
- a definite link between two variables.
- ✓ a possible link between two variables.
- the necessity for a new hypothesis.

Add Question Here

Question 101 **Multiple Choice** **0 points** Modify Remove

Question
Epidemiologists

Answer
- ✓ study the incidence of diseases and risk factors in populations.
- investigate skin diseases.
- perform clinical trials.
- examine autopsy data.
- assess cancer treatments and survival outcomes.

Add Question Here

Question 102 **Multiple Choice** **0 points** Modify Remove

Question
(A) Pitfall(s) to avoid from the analysis of data from single epidemiologic study is/are

Answer
- non-randomized subjects.
- too small a sample size.
- disease complexity.
- lack of proper controls.
- ✓ All of the above

Add Question Here

Question 103 **Multiple Choice** **0 points** Modify Remove

Question
Epidemiological studies

Answer
- are the least common form of human health study.
- usually have only a small number of participants.
- ✓ are used when manipulating people is unethical.
- make conclusions based on laboratory studies.
- are usually very expensive to conduct.

Add Question Here

Question 104 **Multiple Choice** **0 points** Modify Remove

Question
You conduct an experiment to test the effectiveness of a new drug in controlling blood sugar levels in diabetics. Unfortunately, half the participants experienced nausea. Nausea would be considered

Answer
- a control effect.
- an experimental effect.
- a tangential effect.
- ✓ a side effect.
- a placebo effect.

Add Question Here

Question 105 **Multiple Choice** **0 points** Modify Remove

Question
Side effects of caffeine may include all of the following EXCEPT

Answer
- shaking.
- irregular heartbeat.
- frequent urination
- ✓ slower breathing.

anxiety.

Add Question Here

Question 106 **Essay** **0 points** Modify Remove

Question
Caffeine is addictive and therefore causes unpleasant side effects when the user stops consuming it. A researcher wishes to determine the quantity of caffeine intake required to improve alertness. The participants are divided into two groups, with one group receiving a low dose of caffeine and the other group receiving a high dose of caffeine. The subjects are all coffee drinkers who regularly consume more than 100 mg of caffeine per day. All participants, however, are required to abstain from caffeine intake for 12 hours prior to the study. Is the addictiveness of caffeine a potential problem in this study? Why or why not?

Answer The addictiveness of caffeine is a potential problem because the caffeine may simply alleviate the withdrawal symptoms rather than actually increase alertness. Furthermore, the results of this study would not be relevant to people who do not regularly consume caffeine.

Add Question Here

Question 107 **Multiple Choice** **0 points** Modify Remove

Question
All of the following are true of side effects EXCEPT

Answer
- side effects may make data interpretation difficult.
- side effects are unintended results.
- side effects are usually considered problematic.
- ✓ side effects always invalidate the results of the study.
- side effects may vary from person to person.

Add Question Here

Question 108 **Multiple Choice** **0 points** Modify Remove

Question
What is one realistic way to minimize the impact of a drug's side effects on a scientific study?

Answer
- Measure every possible side effect in all subjects.
- Only use subjects who don't have any side effects.
- Focus on one side effect and study it in all subjects.
- Disregard all side effects and focus on the main target of the study.
- ✓ None of the above

Add Question Here

Question 109 **Multiple Choice** **0 points** Modify Remove

Question
In your textbook, you read about the effect of coffee on memory—the researchers concluded that caffeine does not increase alertness. If this study is true, what might be a reason why we feel more alert after consuming caffeine?

Answer
- The side effects of caffeine cause us to “feel” more alert.
- Caffeine counteracts adenosine a chemical that promotes “sleepiness.”
- Regular coffee drinkers are addicted to coffee and feel better when they drink it because it relieves the withdrawal symptoms experienced when they don't drink it.
- ✓ All of the above
- None of the above

Add Question Here

Question 110 **Essay** **0 points** Modify Remove

Question
It is not possible to control for all variables in an experiment. Can you think of anything that could interfere in getting clear-cut results when interpreting data in an experiment like the coffee study?

Answer The side effects of caffeine may masks the real effect of caffeine. This could interfere with data analysis and cause us to draw the wrong conclusions.

Add Question Here

Question 111 **Multiple Choice** **0 points** Modify Remove

Question
Which of the following is not considered to be a side effect of caffeine consumption?

Answer
- Dehydration
- Rapid breathing
- Ringing in ears
- ✓ Memory enhancement
- Twitching

Add Question Here

Question 112 **Multiple Choice** **0 points** Modify Remove

Question
Many chemicals can cause positive reactions in the human system but may also cause a variety of negative effects. These are called

Answer
- ✓ side effects.
- causal effects.
- peripheral effects.
- homeopathic effects.
- indirect effects.

Add Question Here

Question 113 **Multiple Choice** **0 points** Modify Remove

Question
A negative correlation in a scientific study means

Answer
- one variable causes a change in another variable.
- one variable is linked to another variable.
- ✓ one variable increases while the other decreases.
- there is no link between the variables studied.
- both variables decrease proportionately.

Add Question Here

Question 114 **Multiple Choice** **0 points** Modify Remove

Question
A positive correlation in a scientific study means

Answer
- ✓ increases in one variable are linked to an increase in another variable.
- one variable is linked to another variable.
- one variable increases while the other decreases.
- there is a link between the variables studied.
- both variables decrease proportionately.

Add Question Here

Question 115 **Multiple Choice** **0 points** Modify Remove

Question
Scientific studies within a single ethnic population

Answer
- demonstrate cause and effect for that population only.
- ✓ may obscure correlations in other ethnicities.
- are usually done to determine cause and effect for all populations.
- can be easily extrapolated to other ethnicities.
- show links between multi-variables in that population.

Add Question Here

Question 116 **Multiple Choice** **0 points** Modify Remove

Question
Based on Infographic 1.7, which statement is TRUE?

Answer
- Parkinson's disease is caused by drinking too much coffee.
- Parkinson's disease is reduced by drinking coffee.
- ✓ Japanese male coffee drinkers have a lower incidence of Parkinson's disease.
- Japanese coffee drinkers have a higher incidence of Parkinson's disease.
- There is no link between caffeine and Parkinson's disease.

Add Question Here

Question 117 **Multiple Choice** **0 points** Modify Remove

Question
Correlation is

Answer
- a problem encountered when the drug under study causes may different reactions.
- a type of study in which researchers examine what happens to a group of people over time.
- when one factor causes an observed result.
- ✓ when two factors are related to one another in a predictable manner.
- when the effect of one factor hides the effect of the other factor.

Add Question Here

Question 118 **Multiple Choice** **0 points** Modify Remove

Question
You are a researcher studying alcohol intake and smoking. You find that as alcohol intake increases, the number of cigarettes smoked also increases. Which of the following is an appropriate conclusion?

Answer
- Alcohol consumption causes smoking.
- Smoking causes alcohol consumption.
- Alcohol consumption and smoking are not related.
- ✓ Alcohol consumption and smoking are correlated.
- No appropriate conclusions can be drawn from this study.

Add Question Here

Question 119 **Essay** **0 points** Modify Remove

Question
You read an article in the newspaper that says people who consume large amounts of red meat show an increased risk of having a heart attack. Is it correct, then, to say that red meat causes heart attacks? Why or why not? If not, what would be an appropriate conclusion?

Answer No, you cannot say that red meat causes heart attacks. You can only say that consuming red meat is correlated with increased cancer risk. Correlation does not equal causation.

Add Question Here

Question 120 **Multiple Choice** **0 points** Modify Remove

Question
All of the following are true of a clinical trial EXCEPT

Answer
- participants are randomly assigned to different treatment groups.
- ✓ can often be conducted with a large survey.
- can be very expensive.
- can be difficult to get participants to adhere to the treatment regime.
- can be unethical if the treatment group can cause serious harm.

Add Question Here

Question 121 **Multiple Choice** **0 points** Modify Remove

Question
The study of the incidence of disease in a population that cannot be directly manipulated is called

Answer
- an experiment.
- population biology.
- evolutionary biology.
- ✓ epidemiology.
- systemic biology.

Add Question Here

Question 122 **Multiple Choice** **0 points** Modify Remove

Question
Do epidemiologists perform planned scientific experiments with a hypothesis, rigorous controlled experimentation, and data analysis?

Answer
- Yes, they work in labs and perform lab experiments to prove their hypothesis.
- Yes, they use the standard scientific method.
- No, they only form a hypothesis but do not analyze or compile any data.
- ✓ No, they compare data that have already been compiled and look for patterns.
- No, they only do the experiments.

Add Question Here

Question 123 **Multiple Choice** **0 points** Modify Remove

Question
An epidemiologist looks at a compilation of studies done at a medical center in which they have cataloged the lifestyle and habits of thousands of women. When she looks at the women in this group who have contracted breast cancer versus those who are healthy, she finds that women who have breast cancer drink more milk then those who do not have cancer. Does this mean drinking milk causes breast cancer?

Answer
- Yes, if there is a correlation between the two, milk must cause cancer.
- Yes, an epidemiologist uses statistics to look at populations, so it can't be a coincidence.
- ✓ No, just because there is a correlation, does not mean that milk is the cause of the cancer.
- No, it's just a coincidence; correlations never indicate a cause-and-effect relationship.
- None of the above

Add Question Here

Question 124 **Multiple Choice** **0 points** Modify Remove

Question
Randomized clinical trials are

Answer
- expensive.
- difficult to manage.
- unethical if the treatment causes harm.
- ✓ All of the above
- None of the above

Add Question Here

Question 125 **Multiple Choice** **0 points** Modify Remove

Question
You should not use one epidemiologic study to make decisions since

Answer
- diseases are complex.
- all variables cannot be controlled.
- sample size can effect accuracy.
- one population may not be representative of the entire population.
- ✓ All of the above

Add Question Here

Question 126 **Multiple Choice** **0 points** Modify Remove

Question
A link between two factors, such as between caffeine use and rate of Parkinson's disease is

Answer
- ✓ a correlation.
- evidence of causation.
- a side effect.
- a control.
- a placebo.

Add Question Here

Question 127 **Essay** **0 points** Modify Remove

Question
To differentiate between a simple correlation and a causation, researchers often divide subjects into groups under controlled conditions and follow them for a number of years to see if one group has a higher incidence of disease than the other group. What is this type of study called?

Answer
A randomized clinical trial

Add Question Here

Question 128 **Essay** **0 points** Modify Remove

Question
Differentiate between a simple correlation and causation.

Answer A correlation is a link between two factors that may not indicate causations. An example is the link between coffee drinkers and smokers and the incidence of Parkinson's disease. Both coffee drinkers and smokers have a lower incidence of Parkinson's disease, yet these can be quite different activities. It MAY indicate that something about smoking or drinking coffee plays a role in reducing the incidence level of Parkinson's disease, but no causation is proven.

A causation is a definitive link between two factors. Smoking deposits materials into the lungs, decreasing their oxygen-absorbing capacity, causing the heart to work harder. There is a causation then between smoking and increased heart rate.

Add Question Here

Question 129 **Essay** **0 points** Modify Remove

Question
Write true (T) or false (F) after each statement.
1. Evidence for cause and effect may be overstated by the popular press.
2. Clinical trials use experimental drugs or placebos in randomly chosen subjects.
3. Correlation means causation.
4. Studies in male population can be useful in epidemiology studies of women.
5. Studies in ethnic populations can be extrapolated to other ethnicities.

Answer
1. T
2. T
3. F
4. F
5. F

Add Question Here

Question 130 **Multiple Choice** **0 points** Modify Remove

Question
Which published scientific data would be most reliable?

Answer
- A local daily newspaper
- A website
- A drug companies clinical trial results
- A popular scientific magazine
- ✓ A peer-reviewed scientific journal

Add Question Here

Question 131 **Multiple Choice** **0 points** Modify Remove

Question
Peer review means what in relation to scientific journals?

Answer
- ✓ Review by specialists in the field
- Review by the editor
- Review by top scientists
- Review by an editorial board
- Review by people of the same age and ethnicity

Add Question Here

Question 132 **Essay** **0 points** Modify Remove

Question
Imagine you are a journalist whose latest assignment is to write a magazine article on the latest findings about vaccines and autism. What are some of the concerns you might have about how best to convey such a vast amount of information to the general public?

Answer
- How to reduce the material down to the essence of what is important
- How to take complex issues and make them easily understood by non-scientists
- How to convey the information clearly, accurately, and concisely, so as not to mislead the public or cause misunderstandings
- How to report any limitations to the study

Add Question Here

Question 133 **Multiple Choice** **0 points** Modify Remove

Question
Some of the issues faced by media personnel when reporting the latest scientific findings include all of the following EXCEPT

Answer
- how to simplify complex issues.
- how to convey information clearly.
- how to avoid misunderstandings.
- how to determine what about a study is most important.
- ✓ what the researcher's opinion will be about the story.

Add Question Here

Question 134 **Multiple Choice** **0 points** Modify Remove

Question
Rank the following in order from most reliable to least reliable sources of information

Answer
- ✓ Scientific journals→magazine article written by scientist→magazine article written by journalist→public opinion
- Scientific journals→magazine article written by journalist→magazine article written by scientist→public opinion
- Magazine article written by scientist→scientific journal→magazine article written by journalist→public opinion
- Magazine article written by scientist→scientific journal→public opinion→magazine article written by journalist
- Magazine article written by scientist→magazine article written by journalist→scientific journal→public opinion

Add Question Here

Question 135 **Multiple Choice** **0 points** Modify Remove

Question
Why do some media reports about scientific discoveries end up being exaggerations?

Answer
Findings can be misinterpreted.
Some studies are not done using the proper controls or scientific method, so they are unreliable; however, journalists often do not realize the distinction.
Media reports can come from journal articles that are not peer reviewed.
✓ All of the above
None of the above

Add Question Here

Question 136 **Essay** **0 points** Modify Remove

Question
Why would the media choose to report on one scientific study versus another? Is their decision based in science?

Answer Often, the media choose to report on the most sensational or headline-grabbing scientific studies without regard to the scientific merit of the work.

Add Question Here

Question 137 **Multiple Choice** **0 points** Modify Remove

Question
Which news source is the most reliable source of scientific data?

Answer
Wikipedia
✓ A peer-reviewed scientific journal
A newspaper
A news website
The evening television news

Add Question Here

Question 138 **Multiple Choice** **0 points** Modify Remove

Question
Which of the following play a factor in misrepresentation of research data in the media?

Answer
Lack of understanding of the topic by the reporter
Overstating the importance of the study results by the researcher
Misinterpretation of the scientific terminology when trying to disseminate it to the public
Time and space limitations by the media
✓ All of the above

Add Question Here

OK