

CP Biology – CH 1 Benchmark Questions

- For what reason is repeated, careful measurement and documentation of experimental data essential?
 - Only a little data must be collected during a single experiment
 - Data not obtained with perfect accuracy can be discarded
 - Variables can be random and impossible to control
 - Experiments can be reviewed and replicated by other scientists.
- Which of the following phrases best defines a hypothesis?
 - An explanation for an event or condition that best fits the known facts
 - A testable, possible explanation to a scientific question or observation
 - A satisfactory final interpretation of a puzzling natural phenomenon
 - An analysis of quantitative and qualitative data that produces a solution
- The 'Big Bang' theory of the origin of the universe is considered a scientific theory. Which statement best explains what makes this a theory in scientific terms?
 - It does not explain all aspects of the universe we can observe.
 - It can be used to demonstrate measurable effects that are not due to chance.
 - It does not have enough supporting evidence to be considered a hypothesis.
 - It explains a wide range of observations and is supported by much evidence.
- You discover what you think is a new organism in a tide pool. Because it is unusual looking you are not sure if it is living or not. Which of the following tests could you use to help you determine if it is a living organism?
 - Observe under a microscope to see if it is made of cells
 - Poke it with needles to see if it bleeds
 - Pour water over it to see if it 'drinks' the water.
 - None of the above, there is no way to scientifically determine if something is living or non-living.
- What is the role of a control group (not controlled variables) in a scientific experiment?
 - To manipulate all conditions so that their effects can be observed
 - To provide just one factor that does not change
 - To provide a point of reference for 'normal' or standard conditions
 - To ensure that only one dependent variable can be changed at a time
- After an experiment is complete, researchers analyze data with statistics. Data that are statistically significant, _____
 - support or reject the original hypothesis
 - are extremely important
 - are not very significant
 - are not scientifically important
- At which step in the process will a researcher compare the experimental data with the original hypothesis?
 - observing
 - forming hypothesis
 - experiment
 - conclusion
- Which of the following best completes this statement? The more an experiment is repeated, the more
 - reliable the results will be.
 - unavoidable errors are made.
 - models are useful.
 - controls are necessary.