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PSY 101 General Psychology

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Short Answer Questions

Chapter 2

2. What are three safeguards to ensure that animal research is conducted ethically? Do you agree or disagree? Why or why not?

Animal alternatives whenever possible, reduce the number of animals used in research and refine procedures to minimize animal suffering. I agree with this safeguard because it helps to ensure that animal is not used unnecessarily and that their suffering is minimized.

Implementation of strict guidelines and regulations: Establishing research is conducted humanely and in compliance with ethical standards is an important safeguard. I agree with this safeguard because it helps to ensure that animal research is conducted responsibly by providing a set of standards and guidelines that must be followed.

Adequate monitoring and oversight: Establishing a system of oversight and monitoring to ensure that animal research is conducted ethically and in compliance with regulations is another important safeguard. I agree with this safeguard because it helps to ensure that research is conducted in a responsible manner by providing an additional layer of accountability.

Overall, I agree with these safeguards because they help to ensure that animal research is conducted ethically and responsibly.

4. What is the difference between a hypothesis and a theory? Give examples

The difference between a theory and a hypothesis is that a theory is a scientific explanation that has been tried and proven, while a hypothesis is an informed guess about how things function. A hypothesis is an educated guess about how things work. It is based on prior knowledge and observations and is used to explain why something is happening.

For example, a scientist may hypothesize that plants need sunlight for photosynthesis. This hypothesis is based on observations about plants and their environment and can be tested through experiments. Hypotheses are necessary to form a theory. A scientist must start with a hypothesis to explain a phenomenon and then test it through experimentation. If a hypothesis is verified or supported by the evidence, it can then be used to form a theory.

16. What is debriefing? Why is it important?

The most frequent definition of a debriefing is a scheduled facilitated conversation that can be used to learn new information or skills or to address worries about potential risks to patient care and safety based on recent events or hypothetical situations.

Debriefing is important because it clarifies the traumatic event that workers have undergone and aids in the development of a rehabilitation approach. The timeline of events is one of the subjects that skilled debriefs help the workers explore and understand. The underlying causes and outcomes.

22. Using examples, what are key features of the scientific method that ensure scientific findings are based on fact?

The scientific method has five basic steps.

1. Make an observation: Let's suppose that you get two slices of bread, put them into the toaster, and press the button. However, your bread does not toast.
2. Ask the Question: why didn't my bread get toasted?

3. Propose a hypothesis: A hypothesis is a potential answer to the question, one that can somehow be tested. For example, our hypothesis, in this case, could be that the toast didn't toast because the electrical outlet is broken. This hypothesis is not necessarily the right explanation. Instead, it's a possible explanation that we can test to see if it is likely correct, or if we need to make a new hypothesis.
4. Make predictions: A prediction is an outcome we'd expect to see if the hypothesis is correct. In this case, we might predict that if the electrical outlet is broken, then plugging the toaster into a different outlet should fix the problem.
5. Test the predictions: To test the hypothesis, we need to make an observation or perform an experiment associated with the prediction. For instance, in this case, we would plug the toaster into a different outlet and see if it toasts.
 - If the toaster does toast, then the hypothesis is supported-like correct.
 - If the toaster does not toast, then the hypothesis is not supported-likely wrong.

The scientific method is used in all sciences-including chemistry, physics, geology, and psychology. The scientists in this field ask different questions and perform different tests. However, they use the same core approach to find answers that are logical and supported by evidence.

25. As a Christian, what reaction do you have to this chapter? Elaborate and give examples.

This chapter serves as a comforting and encouraging with us, supplying us with hope, comfort, strength, joy, and serenity. Additionally, it discusses having faith in God, his loving compassion and mercy, and the fact that he is ready to assist us even in our most difficult moments. Last but not least, it serves as a timely reminder that God will never abandon us, no matter what difficulties life brings our way.

Chapter 3

30. What is the difference between genotype and phenotype? Give examples

Genotype refers to the genetic makeup of an organism, including all of its inherited genes and genetic variations. It represents the genetic information that an organism possesses, which determines its potential for various traits.

Phenotype, on the other hand, refers to the physical and behavioral traits that an organism actually displays, as a result of the expression of its genotype. The phenotype is determined by both the genotype and the environment in which the organism lives.

For example, consider a plant that has the genotype for tallness (represented by a recessive gene). If the plant has two copies of the tallness gene (TT). It will have the phenotype of being tall. If it has one copy of each gene (Tt), it will have the phenotype of being short.

33. Describe the relationship between chromosomes, DNA, and genes.

Chromosomes, DNA, and genes are all essential components of the genetic material that is responsible for transmitting traits from one generation to another. Understanding the relationship between these three elements is fundamental to understanding genetics and the mechanisms by which traits are passed from parent to offspring.

Chromosomes are long, coiled structures that are found in the nucleus of a cell. They are made up of DNA, which is the chemical that carries genetic information in the form of a code. Chromosomes come in pairs, with each parent contributing one chromosome to each pair. In humans, there are 46 chromosomes in each cell. Arranged in 23 pairs. Chromosomes are responsible for organizing the DNA and ensuring that it is properly separated and protected.

Genes are segments of DNA that contain the instructions for making a specific protein. Proteins are essential for the structure, function, and regulation of the body's cells, tissues, and organs. Genes are responsible for determining traits such as eye color, height, and many other characteristics. The information in a gene is translated into a sequence of amino acids, which make up a protein. Each gene contains a specific sequence of base pairs that codes for a specific protein.

34. What are glial cells?

Glial cells (also known as neuroglia or simply glia) are a non-neuronal cell that plays a crucial role in the central nervous system (CNS) and peripheral nervous system (PNS). They are abundant in the brain and spinal cord and are estimated to outnumber neurons by a factor of 1- to 50.

Why are they important? What are the functions of glial cells?

Glial cells are important because they provide various functions that support the normal functions that support the normal functioning and survival of neurons. Some of the main functions of glial cells include:

- **Structural**
- **Nutritional**
- **Protective**
- **Myelination**
- **Synaptic**

Glial cells are important because they support the survival and normal functioning of neurons and contribute to the overall health and integrity of the nervous system.

38. What is the corpus callosum? What is its function? Explain.

The corpus callosum is a large band of nerve fibers that connects the two hemispheres of the brain, enabling communication and integration between the sides, it is significant because it facilitates the smooth integration of data, ideas, feelings, and memories.

44. In what way are agonists and antagonists similar? Different?

Agonists and antagonists are similar in that they both bind to a specific type of receptor in the body and produce a physiological effect. However, they differ in the nature of their effect.

Agonists and antagonists are important concepts in pharmacology and physiology, as they play a crucial role in the regulation of many physiological processes. Agonists are substances that bind to specific receptors in the body and produce a response that mimics the natural stimulation of that receptor. This means that when an agonist binds to a receptor, it triggers the same signaling natural ligand for that receptor.

Agonists are substances that bind to a receptor and activate it, producing a physiological response that is similar to the natural stimulation of that receptor. For example, an agonist for a particular type of neurotransmitter to the natural stimulation of that receptor might mimic the effect of that neurotransmitter by binding to the receptor and triggering a response.

Antagonists, on the other hand, bid to a receptor but do not activate it. Instead, they block the binding of agonists and prevent the receptor from producing its normal response. Antagonists are often used to treat conditions in which a particular type of receptor is overactive, as a particular type of receptor is overactive, as they can help to reduce the activity of that receptor and reduce its physiological effects.

Reference:

<https://my.clevelandclinic.org/health/bcdna-genes--chromosomes#:~:text=DNA%20genes>

<http://www.openstax.org/details/psychology>

<https://www.sciencedirect.com/tccallosum>