Short Answers Worksheet Grade 6

Short Answer

1. What is the role of the nucleolus?

2. What are the two different kinds of endoplasmic reticulum?

3. Name three cell parts that help defend the cell against invading substances.

4. Name two types of organelles that release energy.

5. What kinds of cells enable larger animals like humans to eat a wider variety of prey?

6. Why weren't cells discovered until 1665? What invention made their discovery possible?
7. List three differences between prokaryotic and eukaryotic cells.

8. What is the main difference between a unicellular organism and a multicellular organism in the way life processes are carried out?

9. In humans, what are the sex chromosomes of females?

10. What is incomplete dominance?

11. What did Mendel call the trait that appeared in all of his first-generation plants?

12. In rabbits, the allele for black fur, B, is dominant over the allele for white fur, b. Suppose two black parents produce one white and three black bunnies. What are the possible genotypes of all four siblings?

13. Explain the relationship between traits and heredity.
14. Describe how probability can describe possible outcomes in offspring.

15. List two ways that plants can cross-pollinate.

16. List three of the characteristics that Mendel studied in pea plants.

17. How would the importance of Mendel’s experiments have been different if he had never done the second experiments?

18. What are the three types of mutations?

19. Are all mutations harmful? Explain your answer.

20. When is DNA copied?
21. List three important events that led to understanding the structure of DNA.

22. If a sample of DNA contained 20% of cytosine, what percentage of guanine would be in this sample? What percentage of adenine would be in the sample? Explain.

23. Explain what is meant by the statement “DNA unites all organisms.”

24. What is the function of the ribosome?

25. Arrange these words in order from smallest part to largest: DNA, nucleotide, chromosome, gene, base.

26. After learning about DNA, your friend begins to refer to his identical twin brother as his “clone.” Is this accurate? Briefly explain your answer.

WITH MY BEST WISHES
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Answer Section

SHORT ANSWER

1. ANS:
The nucleolus stores material that will be used to make ribosomes.

2. ANS:
rough and smooth

3. ANS:
cell membrane, smooth ER, lysosomes

4. ANS:
mitochondria, chloroplasts

5. ANS:
specialized cells

6. ANS:
Cells weren't discovered until 1665 because almost all cells are too small to be seen with the naked eye. The microscope is the invention that made their discovery possible.

7. ANS:
Prokaryotic cells have circular DNA, no nucleus, and no membrane-covered organelles, Eukaryotic cells have linear DNA, a nucleus, and membrane-covered organelles.

8. ANS:
Sample answer: A unicellular organism must perform all life functions by itself. A multicellular organism may have specialized cells that work together to carry out each function.

9. ANS:
XX

10. ANS:
when each allele has its own degree of influence

11. ANS: the dominant trait

12. ANS:
White has genotype bb, and black may have BB or Bb.
13. **ANS:**
   Answers may vary. Sample answer: Heredity is the passing of traits from parents to offspring.

14. **ANS:**
   Answers may vary. Sample answer: Probability allows people to predict the likelihood of traits showing up in offspring. Although probability is not always a definite indication of which traits will show up, it will be fairly accurate over large numbers.

15. **ANS:**
   Answers may vary. Sample answer: Pollen can be carried by insects or by the wind.

16. **ANS:**
   seed shapes, plant height, and flower color

17. **ANS:**
   His work would have been much less important because he would not have discovered the role of recessive traits or the recurring ratio with which recessive traits appear.

18. **ANS:**
   The three types of genetic mutations are insertions, deletions, and substitutions.

19. **ANS:**
   No, genetic mutations may help an individual, harm an individual, or cause no change at all.

20. **ANS:**
   Every time a cell divides

21. **ANS:**
   Erwin Chargaff discovered the rules of nucleotide base pairing; Rosalind Franklin made images of DNA molecules; Watson and Crick made a correct model of DNA's structure.

22. **ANS:**
   20% guanine, because it should be equal to the amount of cytosine; 30% adenine, because the remaining 60% of the DNA should be made up of equal amounts of adenine and thymine

23. **ANS:**
   Sample answer: DNA is found in the cells of the entire variety of organisms on Earth.

24. **ANS:**
   In the ribosome, the mRNA code is translated into proteins.

25. **ANS:**
   base, nucleotide, gene, DNA, chromosome

26. **ANS:**
   Answers may vary. Sample answer: No, the friend and his twin share identical DNA. A clone is created by copying the DNA of an existing organism