Biology chapter 14 assessment answers

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What does a normal human diploid zygote contains? Answer and Explanation: A normal human diploid zygote contains 46 chromosomes. A zygote containing more or less chromosomes have abnormal gene dosage resulting in significant developmental defects. This is the case in diseases such as Down's syndrome which occurs when the zygote has an extra copy of chromosome 21.

Which of the following genotypes will result in the same phenotype for both individuals? IB IB and IB i is the pair of genotypes that results in the same phenotype. genotypes means the genetic constitution of an individual organism. And phenotype is the set of observable characteristics of an individual resulting from the interaction of its genotype with the environment.

Is a zygote a haploid or diploid? The zygote is endowed with genes from two parents, and thus it is diploid (carrying two sets of chromosomes).

Is diploid sperm or egg? Sperm and egg cells, known as gametes, fuse during fertilization to create a zygote. Gametes have half the chromosomes (haploid) of a typical body cell, while zygotes have the full set (diploid).

What does the notation RR mean to geneticists heterozygous alleles, homozygous alleles, dominant alleles, recessive alleles? There are dominant homozygotes (i.e. RR individuals) and recessive homozygotes (i.e. rr individuals). An individual who carries two different alleles (i.e. Rr) is a heterozygote (hetero = different). A dash (-) is used to represent an unknown allele or a mix of alleles.

Is heterozygous dominant or recessive? Unlike homozygous, being heterozygous means you have two different alleles. You inherited a different version from each parent. In a heterozygous genotype, the dominant allele overrules the recessive one.

Therefore, the dominant trait will be expressed.

How many copies of a dominant allele are needed for that trait to show up? In the case of a dominant trait, only one copy of the dominant allele is required to express the trait. The effect of the other allele (the recessive allele) is masked by the dominant allele. Typically, an individual who carries two copies of a dominant allele exhibits the same trait as those who carry only one copy.

What is the ultimate goal of mitosis? The main purpose of mitosis is to produce two daughter cells identical to the parent cell; so the number of chromosomes in the parent and daughter cells must be the same. Mitosis produces two diploid cells from one diploid cell.

What are three ways mitosis and meiosis are different?

Which process offers a greater chance of nondisjunction, mitosis or meiosis? Nondisjunction means that a pair of homologous chromosomes has failed to separate or segregate at anaphase so that both chromosomes of the pair pass to the same daughter cell. This probably occurs most commonly in meiosis, but it may occur in mitosis to produce a mosaic individual.

How many chromosomes are found in a human haploid cell? In humans, gametes are haploid cells that contain 23 chromosomes, each of which a one of a chromosome pair that exists in diplod cells. The number of chromosomes in a single set is represented as n, which is also called the haploid number. In humans, n = 23.

What is female sperm called? In animals, female gametes are called ova or egg cells, and male gametes are called sperm. Ova and sperm are haploid cells, with each cell carrying only one copy of each chromosome.

What is the end result of meiosis? At the conclusion of meiosis, there are four haploid daughter cells that go on to develop into either sperm or egg cells.

What is the inheritance of dihybrid cross by law? Dihybrid crosses are visual representations of the inheritance of the different versions of these genes, termed “alleles.” According to the law of independent assortment of Mendelian inheritance, alleles of different genes are inherited independently of each other.

Which genes are dominant? Dominant and recessive genes. The most common interaction between alleles is a dominant/recessive relationship. An allele of a gene is said to be dominant when it effectively overrules the other (recessive) allele. Eye colour and blood groups are both examples of dominant/recessive gene relationships.

What is the essence of codominance? Codominance, as it relates to genetics, refers to a type of inheritance in which two versions (alleles) of the same gene are expressed separately to yield different traits in an individual.

What is the Punnett square easy explanation? A Punnett square is a chart that allows you to determine the expected percentages of different genotypes in the offspring of two parents. A Punnett square allows the prediction of the percentages of phenotypes in the offspring of a cross from known genotypes.

When homologous chromosomes have different alleles on them? Heterozygous for a gene refers to when a homologous pair of chromosomes has different alleles of the same gene. A gene pair's two alleles are found on homologous chromosomes. Alleles are a type of gene that differs from others.

What is a monohybrid and dihybrid cross with an example? A Monohybrid cross determines the inheritance of just one gene - e.g. pea color (Gg x Gg). A Dihybrid cross evaluates the inheritance of two genes simultaneously - e.g. pea color AND flower color (PpGg x PpGg).

What does a human zygote normally contain? Zygote is formed due to the fusion of male and female gametes. Gametes are haploid cells. Thus fusion of two haploid cells results in the formation of a diploid cell. Therefore zygote is a diploid cell with 46 chromosomes.

What does a normal diploid cell have? A diploid cell has two complete sets of chromosomes. Most cells in humans are diploid, comprising 23 chromosome pairs, so 46 chromosomes in total. This is 22 pairs of autosomes and a pair of sex chromosomes. One copy of each chromosome pair came from the individual's mother and the other from the individual's father.

Does a normal human zygote have 46 chromosomes? Through the process of fertilization, egg and sperm join to make a cell with 46 chromosomes (23 pairs), called a zygote. For each chromosome pair, one homologous chromosome came from each parent.

What is the diploid number in human zygotes? The number of chromosomes in most cells except the gametes (reproductive cells). In humans, the diploid number is 46.

What does a zygote consist of? A zygote, also called a fertilized egg, is the phase of conception where the egg and sperm join to form a single cell. The zygote contains a full set of chromosomes, with 23 from the egg and 23 from the sperm.

How many cells are contained in a human zygote? The process of human development starts when a sperm cell fuses with an egg during fertilization, producing a single cell called a zygote.

Does zygote have 23 chromosomes? During fertilisation, male gametes combine with a female gamete to form a zygote. Therefore, zygote contains two sets of 23 chromosomes for the required 46 chromosomes in humans and the respective number in other animals as well.

What are the four phases of mitosis? Mitosis has four stages: prophase, metaphase, anaphase, and telophase. Encyclopædia Britannica, Inc.

What are two pairs of each set of chromosomes? Diploid describes a cell that contain two copies of each chromosome. Nearly all the cells in the human body carry two homologous, or similar, copies of each chromosome.

How many pairs of chromosomes do humans have? Chromosomes come in pairs. Normally, each cell in the human body has 23 pairs of chromosomes (46 total chromosomes). Half come from the mother; the other half come from the father.

What is the difference between gene mutations and chromosome mutations? All mutations fall into two basic categories: Those that produce changes in a single gene are known as gene mutations. Those that produce changes in whole chromosomes are known as chromosomal mutations.

What are the basics of meiosis? Meiosis is a process where a single cell divides twice to produce four cells containing half the original amount of genetic information. During meiosis one cell divides twice to form four daughter cells.

How many daughter cells are created from mitosis and cytokinesis? Cytokinesis is the physical process of cell division, which divides the cytoplasm of a parental cell into two daughter cells. It occurs concurrently with two types of nuclear division called mitosis and meiosis, which occur in animal cells.

Are karyotypes sister chromatids?

What is a haploid cell with half the reproductive information from the parent? As mentioned before, gametes are reproductive cells that contain only half of the genetic information of a somatic cell. These haploid cells fuse during a process called fertilization to generate a diploid organism with unique genetic information. Male gametes are called sperm and female gametes are called eggs.

What does n mean in biology? The number of chromosomes in a single set is represented as n, which is also called the haploid number. In humans, n = 23. Gametes contain half the chromosomes contained in normal diploid cells of the body, which are also known as somatic cells.

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