

AP BIO GENETICS REVIEW

- 1 In a cross $AaBb \times AaBb$, what is the probability of producing an offspring with the genotype $AABB$?
 - A $1/4$
 - B $1/2$
 - C $1/8$
 - D $1/16$
 - E $1/32$
- 2 A tall plant is crossed with a short plant and the offspring are all intermediate in size between the two parents. This could be an example of _____.
 - A complete dominance
 - B polygenic inheritance
 - C incomplete dominance
 - D Both A and B
 - E Both B and C
- 3 Cystic fibrosis affects the lungs, pancreas, digestive system, and other organs resulting in symptoms ranging from breathing difficulties to recurrent infections. This is an example of _____.
 - A epistasis
 - B pleiotropy
 - C multiple alleles
 - D incomplete dominance
- 4 A woman has 6 sons. The chance that her next child will be a daughter is _____.
 - A $1/7$
 - B $1/8$
 - C $1/4$
 - D $1/2$
 - E $5/6$
- 5 All of the following are TRUE about a person who is heterozygous for sickle cell disease EXCEPT _____.
 - A is usually healthy
 - B produces both normal and abnormal hemoglobin
 - C has increased resistance to malaria
 - D CAN'T have a child with sickle cell disease
 - E is more likely to be African American
- 6 This disorder results from a defect in blood clotting proteins
 - A hemophilia
 - B sickle cell anemia
 - C phenylketonuria
 - D Tay-Sachs
 - E Huntington's
- 7 Which of the following is inherited as an autosomal dominant disorder?
 - A Tay-Sachs
 - B Achondroplasia
 - C Cystic fibrosis
 - D Hemophilia
 - E Down syndrome
- 8 Which of the following disorders is X-linked?
 - A Tay-Sachs
 - B PKU
 - C Huntington's
 - D Turner syndrome
 - E hemophilia

- 9 Males are more often affected by X linked traits than females because _____
- A male hormones such as testosterone often interact with X linked alleles
 - B female hormones like estrogen compensate for mutations on the X
 - C X chromosomes in males generally have more mutations than X chromosomes in females.
 - D Males are hemizygous for the X chromosome and don't have a back up X
 - E mutations on the Y chromosome are often codominantly expressed with X chromosome mutations.

10 Which of the following disorders is the result of nondisjunction?

- A Klinefelter syndrome
- B Phenylketonuria
- C Huntington's
- D Tay-Sachs
- E Duchenne Muscular Dystrophy

11 Calico cats with two colors of spots are female because _____

- A the calico allele is lethal in males
- B the Y chromosome has an epistatic gene that blocks hair color
- C Barr bodies prevent the formation color pigment in males
- D a male inherits only one of the two X-linked genes that control hair color
- E multiple crossovers on the Y chromosome prevent orange pigment formation

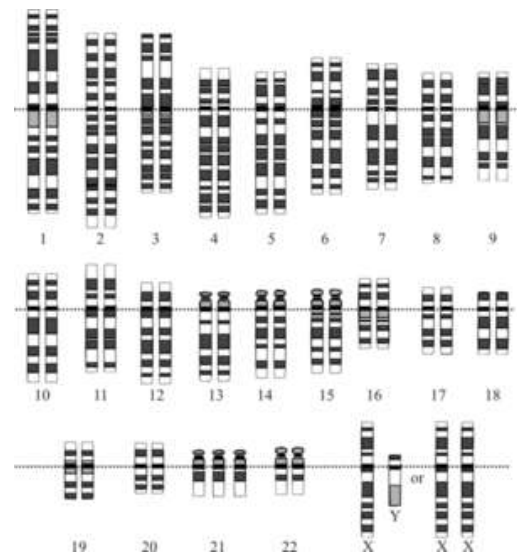
12 A male who has an X linked allele will pass it on to _____.

- A all his daughters
- B half of his daughters
- C all of his sons
- D half of his sons
- E all of his children

13 Which of the following terms is LEAST related to each other?

- A Duchenne muscular dystrophy
- B autosome
- C color blindness
- D hemophilia
- E sex-linked genes

14 The karyotype shown is associated with which of the following



genetic disorders?

- A Turner syndrome
- B Down syndrome
- C Klinefelter syndrome
- D hemophilia
- E Cri-du-chat

- 15 ALL of the following are TRUE about genomic imprinting except _____.
- A Genomic imprinting occurs during gamete formation.
 - B It results in the silencing of one allele so that only the maternal OR paternal chromosome is expressed.
 - C It produces Barr bodies in female cells.
 - D It involves the methylation or demethylation of cytosine nucleotides
 - E It is responsible for the differences in gene expression in Prader-Willi and Angelman syndromes.
- 16 What is the probability that the offspring of two heterozygous parents in a dihybrid cross would show one dominant and one recessive trait?
- A 9/16
 - B 3/16
 - C 1/2
 - D 1/16
 - E 1/8
- 17 A person with A type blood RECEIVE BLOOD FROM someone with which of the following blood types?
- A A
 - B AB
 - C O
 - D A and O
 - E A and AB
- 18 Which of the following do males inherit from their mother?
- A mitochondrial DNA
 - B an X chromosome
 - C the SRY gene
 - D A and B only
 - E A, B, and C
- 19 If a chromosome lacks certain genes, what has most likely occurred?
- A disjunction
 - B a deletion
 - C an inversion
 - D a translocation
 - E a nonduplication
- 20 cell with $2n + 1$ chromosomes is _____
- A trisomic
 - B monosomic
 - C aneuploid
 - D polyploid
 - E both A and C

Answer Key : AP BIO GENETICS REVIEW

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Answer

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