

These review questions are for Bio 1 Chromosomes topic. The questions were adapted from several sources, including the textbook's review questions.

1) The nucleic acid(s) in each chromosome are...

- A) Single stranded DNA
- B) Double stranded DNA
- C) One piece of single stranded DNA and one piece of single stranded RNA
- D) Double stranded RNA
- E) Amino acids

2) The major proteins in chromosomes that the nucleic acids wrap around:

- A) Histones
- B) Centromeres
- C) Amylase
- D) Topoisomerase
- E) Helicase

3) The part of a chromosome that the cell uses to move the chromosome during cell division:

- A) Histones
- B) Centriole
- C) Locus
- D) Centromere
- E) Nucleic acids

4) The diffuse spread out state of chromosomes

- A) Nucleic acid
- B) Nucleus
- C) Chromatin
- D) Centriole
- E) Nucleiod matter

5) One piece of double stranded DNA (and its histones) is a _____ of a chromosome.

- A) Centromere
- B) Chromatin
- C) Ribosome
- D) Chromatid
- E) Locus

6) The number of chromosomes that a species has in each of its cells is the _____ of

that species.

- A) Haploid
- B) Locus number
- C) Diploid
- D) Chromosome ploidy
- E) Chromosome number

7) The chromosome number of human beings is...

- A) 1
- B) 23
- C) 46
- D) 48
- E) 120

8) If we compare human chromosome 1 to human chromosome 2, we would find that the two chromosomes have different _____ than each other.

- A) Genes and length
- B) Length and histone protein types
- C) Histone protein types and shape (circular versus linear chromosomes)
- D) Shape (circular versus linear) and genes

9) The chromosomes of a species are assigned numbers. The higher the number of a chromosome, the _____.

- A) Shorter its length
- B) Longer its length
- C) Denser its nucleic acids (higher histone wrapping)
- D) More DNA strands it contains
- E) The more histones it has per kilobase

10) A gene's location on a chromosome is called the _____ of the gene.

- A) Locus
- B) Expression
- C) Chromatin
- D) Chromatid
- E) Codon

11) Most human chromosomes contain _____ of genes.

- A) Several dozens to hundreds
- B) Several hundreds to thousands
- C) Several thousands to millions
- D) At least several million

E) At least several billion

12) In person A, a certain gene's locus is at the very end of chromosome 4. In a different person, that gene's locus...

- A) Might also be at the end of chromosome 4, but it also might have a different locus.
- B) Must be at the end of chromosome 4.
- C) Would not be at the end of chromosome 4 (unless the two persons were identical twins).

13) For a pair of homologous chromosomes, each chromosome _____ as the other.

- A) Has the same length and is attached to the same centromere
- B) Is attached to the same centromere and has the same genes
- C) Has the same genes and has the same length
- D) Are only found in identical twins

14) Organisms that have two of each chromosome type (such as two chromosome 1's, two chromosome 2's, two chromosome 3's, etc.) are called _____ organisms.

- A) Duel
- B) Homozygous
- C) Diploid
- D) Heterozygous
- E) Dichromal

15) Organisms that have only one of each chromosome type (such as only one chromosome 1, only one chromosome 2, only one chromosome 3, etc.) are called _____ organisms.

- A) Singular
- B) Homozygous
- C) Haploid
- D) Hetrozygous
- E) Monochromal

16) The symbol for diploid is...

- A) $2n$
- B) --
- C) ||
- D) XY
- E) XX

17) How many of each gene do diploid cells have?

- A) 1
- B) 2
- C) 4
- D) 25,000

18) The symbol for haploid is...

- A) n
- B) -
- C) |
- D) X
- E) Y

19) How many of each gene do haploid cells have?

- A) 1
- B) 2
- C) 3
- D) 25,000

20) The term "alleles" means...

- A) Two genes that are identical
- B) Two different genes that encode the same trait
- C) Two organisms that help each other survive
- D) Molecules on the chromosome that stimulate the immune system
- E) Different versions of the same gene

21) Homozygous

- A) An organism that has lost one of its chromosomes
- B) An organism with two of each chromosome type (two chromosome 1's, two chromosome 2's, etc).
- C) An organism with two of the same alleles for a gene
- D) A cell with two identical nuclei
- E) A cell that contains just one chromosome

22) Heterozygous

- A) An organism that has gained one of extra chromosomes
- B) An organism with two of each chromosome type (two chromosome 1's, two chromosome 2's, etc).
- C) An organism with two different alleles for a gene
- D) A cell with two identical nuclei
- E) A cell that contains more than one chromosome

Answers to review questions:

- 1) B
- 2) A
- 3) D
- 4) C
- 5) D
- 6) E
- 7) C
- 8) A
- 9) A
- 10) A
- 11) B
- 12) B
- 13) C
- 14) C
- 15) C
- 16) A
- 17) B
- 18) A
- 19) A
- 20) E
- 21) C
- 22) C