

Principles of Genetics

Chapter 6 through 8

Name _____

Please define the following terms with complete sentences.

- OK 1. Crossing over when two homolog synapse & exchange segments during meiosis.
- OK 2. Linkage genes are on the same chromosome that are inherited together.
- ✓ 3. The heterozygote produced by the fusion of a male and female cell during fertilization. Must be different alleles.
- ✓ 4. Ordered Tetrad Analysis individual cell and structure, allowed to mature, and the order of the ascospores is determined.
- OK 5. Heterokaryon produced by the fusion of cells from two different species, Not by fertilization.
- 1 6. Monoecious or Hermaphroditic house
~~monoecious~~ means the organism has ^{both} male or female characteristics.
Hermaphroditic means it has both male + female characteristics.
- ✓ 7. Triploid Endosperm
Endosperm that has 3 of the same chromosome, cell becomes the embryo and is involved in double fertilization. Why not describe this!
- OK 8. The SRY region in the male Y chromosome
SRY = sex determining region. cell determines the sex of the offspring. If the Y chromosome is missing when a female cell develops.
- OK 9. Barr bodies
inactivated X chromosomes
- OK 10. Temperature dependent Sex Determination
The sex of the offspring will be determined by the temp. of the environment it is in.
- OK 11. Polyploid
Has more than two sets of haploid chromosomes.
ex. 3n, 4n, etc. ← this was the only reason you got credit

12 Aneuploid

✓ Has gained or lost a chromosome set. ~~vs. 2n~~ ^{if false definition} ~~example~~ ^{correct example}

13. Karyotyping

✓ Mapping out of chromosomes. ~~No Mapping~~ ^{used to distinguish chromosomal mutations.} ^{photograph of metaphase chromosomes.}

14. Allopolyploidy

✓ Has hybrid chromosome sets from different species.

15. Gene duplication

✓ Certain sections of a chromosome or genes in the chromosome appear multiple times in the genome.
 vs. A B C D B C D B C D E F

Match the following terms with their definitions.

- E 16. Endopolyploidy ~~A.~~ 2n plus 1 or 2 chromosomes or minus 1 or 2
- C 17. Allopolyploidy ~~B.~~ 47 chromosomes
- D 18. Autopolyploidy ~~C.~~ sets of chromosome from different species in one cell.
- A 19. Aneuploidy ~~D.~~ Complete multiple sets of chromosomes of three or more.
- B 20. Trisomy ~~E.~~ Only certain cells of an organism are polyploid, such as the salivary glands of D. melanogaster larvae.

all OK

Match the following terms

- B 21. Lyon hypothesis ~~A.~~ Caused by physical damage such as non dysjunction or deletion, or breakage.
- D 22. Dosage Compensation ~~B.~~ Barr body evidence.
- A 23. Chromosome mutations ~~C.~~ Only part of an extra chromosome is cause.
- C 24. Partial Monosomy ~~D.~~ Single X may be read more often in hemizygote.
- E 25. Trisomy 21 ~~E.~~ Down's syndrome

Match the following

- C 26. Triticale ~~A~~. repeats of genes in a chromosome with some genes appearing twice or more times.
- B 27. Deletion ~~B~~. Some portion of the DNA is missing in a chromosome.
- E 28. Pseudodominance ~~C~~. A hybrid which hexaploid.
- A 29. Duplication ~~D~~. When one gene is found in hundreds of copies and no others are.
- D 30. Gene amplification ~~E~~. The expression of a recessive gene because the homologue has a deletion of that homologous locus.

Match these.

- D 31. Gene families ~~A~~. a change in expression of a gene when in a new location on a chromosome.
- C 32. Inversion ~~B~~. The movement of a few genes from one place to another place in a chromosome.
- A 33. Position effect ~~C~~. A few genes are removed and then replaced in a reverse order in a chromosome.
- B 34. Translocation ~~D~~. Several genes are duplicated more than two times and have changed their phenotypes from one another.
- E 35. Fragile sites ~~E~~. Some chromosomes have weak spots that break much more often than others.

Match these

- D E 36. Gene anticipation ~~A~~. often associated with cancers
- C 37. Fragile sites ~~B~~. Mice with foreign DNA in their nucleus.
- D 38. Bilateral Gynandromorph ~~C~~. Chromosomes with repeated sites break easy.
- A 39. Male to female ratio ~~D~~. small parts of a gene are repeated so often that the repeats cause a disease eventually in a family.
- B 40. Transgenic mice E. rRNA is an example where many genes for making ribosomes are present.

Replacement credit Essay. Describe the life cycle of corn. 10 points. Use the back.s