

Patterns of Inheritance



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ← المناهج الإماراتية ← الصف الحادي عشر العام ← علوم ← الفصل الثالث ← ملفات متنوعة ← الملف

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المزيد من مادة
علوم:

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التواصل الاجتماعي بحسب الصف الحادي عشر العام



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الحادي عشر العام والمادة علوم في الفصل الثالث

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BIOLOGY

Chapter 1

PATTERNS OF INHERITANCE

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تنبيه : هذا المحتوى نتاج مجهود شخصي وفكري، ويمنع منعاً
باتاً تعديل أو نشر هذا المحتوى إلا بإذن من صاحب العمل

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Genetic Recombination And Gene Linkage

Q1) .Which statement explains why random fertilization contributes to genetic variation?

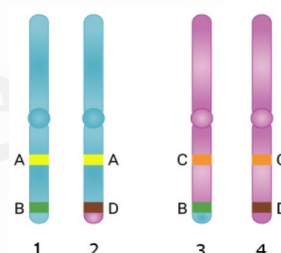
- A. Because the egg and sperm produced by meiosis are genetically unique
- B. Because the egg and sperm produced by meiosis are genetically identical
- C. Because the egg and sperm produced by meiosis are genetically similar
- D. Because the egg and sperm produced by meiosis are genetically the same

Q2) .The Virginia opossum has 22 chromosomes. Its possible number of chromosome combinations when producing gametes is ___ ?

- A. 2^2
- B. 2^{11}
- C. 22^2
- D. 11^2

Q3) .In the illustration, the chromatids that are more likely to contribute to genetic variation are ?

- A. 1 and 2
- B. 3 and 4
- C. 1 and 4.
- D. 2 and 3



Q4) .Select the correct answer. A species with more genetic variation

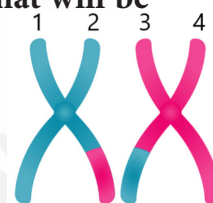
- A. is more likely to survive in a changing environment.
- B. is less likely to survive in a changing environment.
- C. can't survive in a changing environment.
- D. must survive in a changing environment.

Q5) . The number of possible chromosome combinations in gametes is equal to 2^n , where n is the _____ number of chromosomes

- A.haploid
- B. multiple
- C.diploid
- D.double

Q6) .Which pair of the following represents the correct pair of chromatids that will be pulled into one of the two cells formed at the end of meiosis I?

- A. 1 and 2
- B. 3 and 1
- C. 1 and 4.
- D. 2 and 3



Q7) . Meiosis increases genetic variation through which process during metaphase I?

- A. Crossing over
- B. Independent assortment
- C. Random fertilization
- D. Chromosome duplication

Genetic Recombination And Gene Linkage

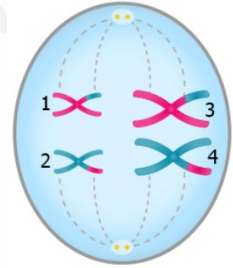
Q8) . The image shows two pairs of homologous chromosomes moving towards different ends of the dividing cell in anaphase I of meiosis. Chromosomes 1 and 3 will end up in one cell, and chromosomes 2 and 4 will end up in the other cell. If the alignment were different during metaphase I, which chromosomes could end up in one of the two cells at the end of meiosis I ?

A. 2 and 3

B. 1 and 2

C. 1 ,2 ,3 and 4

D. 3 and 4



Q9) .The koala has 16 chromosomes. How many possible chromosome combinations can result in the offspring?

A. 4,096

B. 16,384

C. 65,536

D. 262,144

Q10) .The spinach plant has 12 chromosomes. How many possible chromosome combinations can one spinach plant have during gametes formation?

A. 36

B. 144

C. 64

D. 256

Q11) .The two processes in meiosis that contribute to genetic variation occur during ?

A. meiosis I

B. meiosis II

C. interphase

D. telophase I

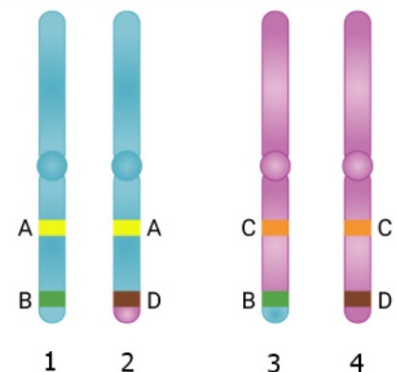
Q12) The non-recombinant chromatids in the illustration are ?

A. 1 and 2

B. 2 and 3

C. 1 and 4

D. 3 and 4



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Genetic Recombination And Gene Linkage

Q13) .Crossing over contributes to genetic variation. The result is four genetically _____ chromatids for each pair of homologous chromosomes .

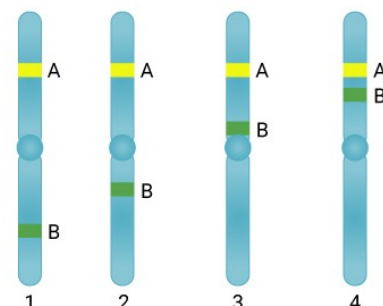
- A. identical
- B. similar
- C. different
- D. recombinant

Q14) .Which of the following processes in meiosis would lead to genetic variation in organisms that reproduce sexually?

- A. The formation of spindles in prophase II
- B. The crossing over of homologous chromosomes in prophase I
- C. The alignment of chromatids in metaphase II
- D. The duplication of DNA during interphase

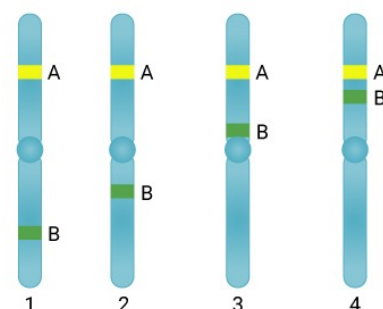
Q15) .The pair of linked genes most likely to follow Mendel's law of independent assortment is the pair in figure number _____.

- A. 1
- B. 2
- C. 3
- D. 4



Q16) .The pair of linked genes that are least likely to follow Mendel's law of independent assortment are in figure number _____.

- A. 1
- B. 2
- C. 3
- D. 4



Q17) .When can linked genes get separated?

- A. During fertilization
- B. During crossing over
- C. Linked genes cannot be separated under any condition
- D. When random assortment occurs

Genetic Recombination And Gene Linkage

Q18) . Which of the following BEST describes linked genes?

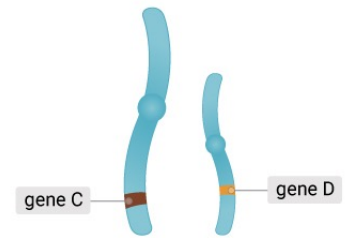
- A. Genes located on the same chromosome
- B. Genes located on homologous chromosomes
- C. Genes located on the same location on the chromosome
- D. Genes located on X and Y chromosomes

Q19) . Linked genes that are close to each other on the same chromosome are least likely to be inherited independently. However, they might be separated by :

- A. crossing over
- B. random assortment
- C. fertilization
- D. duplication

Q20) . Genes C and D in the illustration are examples of which genes ?

- A. linked
- B. unlinked
- C. homologous
- D. recombinant



Q21) . TLinked genes can crossover during whicj phase of meiosis.

- A. prophase I
- B. metaphase I
- C. anaphase I
- D. telophase I

Q22) .What is the most likely location for genes that are inherited together in the gamete?

- A. On opposite ends of the same chromosome
- B. At the same location on sister chromatids
- C. One on each homologous chromosome
- D. Close together on the same chromosome

Q23) . Which statement is TRUE about linked genes such as those for red hair and freckles?

- A. They are found on different chromosomes
- B. They, generally, do not follow Mendel's law of independent assortment
- C. They usually get separated during crossing over
- D. They are rarely inherited together during gamete formation

Q24) The pair of genes that are most likely to be separated during crossing over is ?

- A. A - C
- B. A - B
- C. B - C
- D. none



Genetic Recombination And Gene Linkage

Q25) .The pair of genes that are less likely to be separated during crossing over is ?

A. A - C

B. A - B

C. B - C

D. none



Q26) .Crossing over occurs between ?

A. homologous chromosomes

B. sister chromatids

C. non-homologous chromosomes

D. duplicated genes

Q27) .The recombination frequency is an indication of the ____ between linked genes on a chromosome.

A. relative distance

B. chromosome number

C. gene size

D. DNA sequence

Q28) .Which pair of the following linked genes will have the lowest recombination frequency?

A. C and A

B. D and C

C. A and B

D. A and D



Q29) .Which gene pair are the furthest apart on the chromosome?

A. B and D

B. A and B

C. B and C

D. C and D

Linked Gene Pair	Recombination Frequency
A - B	1%
A - C	11%
C - D	12%
B - D	24%

Q30) .Plants that are polyploid are likely to have __fruit than those of their diploid relatives.

A. bigger

B. smaller

C. sweeter

D. fewer

Q31) .The order of genes on this chromosome is .

A. BACD

B. ABCD

C. BCAD

D. ACBD

Linked Gene Pair	Recombination Frequency
A - B	7%
B - C	15%
C - D	12%
B - D	27%

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Q32) .From the above table, you can tell that the order of the genes on the chromosome is

- A. ACB
- B. ABC
- C. CAB
- D. CBA

Linked Gene Pair	Recombination Frequency
A - B	10%
C - B	2%
A - C	8%

Q33) .If the linked genes on a chromosome have the order BAC, then ____ are the furthest genes on that chromosome.

- A. B and C
- B. A and B
- C. A and C
- D. A and B and C

Q34) .In most species, body cells have ____ set(s) of chromosomes. They are said to be diploid.

- A. two
- B. three
- C. four
- D. many

Q35) .Which linked gene pair will have the highest recombination frequency?

- A. C and D
- B. B and C
- C. A and C
- D. A and D



Q36) .Organism X has a haploid (n) count of 10. Its body cells contain 100 chromosomes. We can conclude from this information that organism X is ?

- A. diploid
- B. triploid
- C. tetraploid
- D. polyploid

Q37) .Plant Y is triploid. It has 36 chromosomes. The haploid (n) number of chromosomes is

- A. 12
- B. 18
- C. 24
- D. 6

Q38) .Which of these is a type of polyploidy?

- A. haploidy
- B. monoploidy
- C. triploidy
- D. diploidy

Q39) .Which of these organisms is most likely to exhibit polyploidy?.

- A. Owl
- B. Salmon
- C. Chimpanzee
- D. Banana

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