

Patterns of Inheritance - Mendelian Genetics



تم تحميل هذا الملف من موقع المناهج الإماراتية

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

تاريخ إضافة الملف على موقع المناهج: 01:20:49 2026-07-02

ملفات اكتب للمعلم اكتب للطالب | اختبارات الكترونية | اختبارات | حلول | عروض بوربوينت | أوراق عمل
منهج انجليزي | ملخصات وتقارير | مذكرات وبنوك | الامتحان النهائي | للمدرس

المزيد من مادة
علوم:

إعداد: Mohammed Yousof

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

Complex Patterns of Inheritance

1

Basic Patterns of Human Inheritance: Pedigrees

2

Applied Genetics

3

Genetic Recombination and Gene Linkage

4

Practice for Mendelian Genetics

5



BIOLOGY

Chapter 1

PATTERNS OF INHERITANCE

Mr. Yousof Mohammed

0562290423

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

Warning: This content is the result of personal effort and
intellectual work. All rights are reserved. Any modification
or distribution of this content is strictly prohibited without
the author's permission



MENDELIAN GENETICS

Q1) . Which of the following explains why the pea plant, like all flowering plants, can reproduce sexually?

- A. They have the male parts only
- B. They have the male parts and the pollen
- C. They have the male and female parts**
- D. They have the female part only

Q2) . Which of the following was not one of the seven characteristics Mendel studied in his pea plant experiments?

- A. Plant height
- B. Seed color
- C. Flower color
- D. Leaf shape**

Q3) . Which scientist was the founder of modern genetics?

- A. Charles Darwin
- B. Louis Pasteur
- C. Gregor Mendel.**
- D. Thomas Edison

Q4) . passing of traits from parents to offspring is known as :

- A. Chromosomes.
- B. Heredity**
- C. Gametes
- D. Organelles

Q5) . Which of the following statements is CORRECT?

- A. Gregor Mendel is known as the “father of genetics” based on his experiments with bell pepper.
- B. Gregor Mendel is known as the “father of genetics” because he studied genetics in college.
- C. Gregor Mendel is known as the “father of genetics” because he used to plant his garden.
- D. Gregor Mendel is known as the “father of genetics” based on his experiments with pea plants.**

Q6) . Mendel removed the male parts of his flower to prevent self-fertilization, why ?

- A. Mendel wanted to sequence the DNA of the purple-flowered plants.
- B. Mendel wanted to discover how the color of flowers was determined in pea plants.**
- C. Mendel wanted to prevent the plant from producing seeds.
- D. Mendel wanted to know whether this plant will still be able to reproduce.

Q7) . How did Mendel control the mating in his pea plants?

- A. Mendel used a brush to move pollen from the stamen to the pistil of the same flower.
- B. Mendel allowed pea plants to self-pollinate for many generations.
- C. Mendel planted pea plants with different characteristics in different gardens.
- D. Mendel separated the male and the female parts of the flowers to prevent self-pollination.**

MENDELIAN GENETICS

Q8) . What did Mendel study using experiments on pea plants?

- A. the importance of a garden for healthy life
- B. the passing of traits from one generation to the next**
- C. the life cycle of the pea plant
- D. how to grow different varieties of true-breeding pea plants

Q9) . Which of the following is NOT correct about why Mendel selected pea plants for his experimental study?

- A. pea plants produce few offspring**
- B. pea plants grow easily and quickly
- C. pea plants have observable, contrasting traits
- D. pea plants can self-pollinate and cross-pollinate

Q10) . The branch of biology concerned with the study of genes and how they are passed on from parents to offspring is called:

- A. Anatomy
- B. Genetics**
- C. Ecology
- D. Physiology

Q11) .Mendel cut the stamens (male parts) from the purple flower in order to prevent which process from occurring in the same plant?

- A. germination
- B. cross-pollination
- C. seed dispersal
- D. self-pollination**

Q12) Which of the following best explains why Mendel's work with pea plants was successful?

- A. These actions helped Mendel get a new job.
- B. These actions helped Mendel become the best farmer in the mid-1800s.
- C. These actions are scientific reasons for the success of Mendel's experimental work.**
- D. These actions wasted a lot of time and energy.

MENDELIAN GENETICS

Q13) .Which statement is NOT true about self-pollination in plants?

- A. It involves the movement of pollen grains from one flower to the female part of another flower of the same species.
- B. It involves a male and a female gamete enclosed in the same flower.
- C. It involves the movement of pollen grains to the female part of the same flower.
- D. The pollen grains are not transmitted from one flower to another.

Q14) .Imagine you are a geneticist following in Mendel's footsteps, and you had to pick another organism, instead of the pea plant, to study genetics. Which of these properties would be an advantage?

- A. long life cycle
- B. easy to breed
- C. few observable traits.
- D. produces few offspring

Q15) .How did the growth rate of pea plants prove to be an advantage to their use in Gregor Mendel's genetics experiments?

- A. He had plenty of time to observe the way they grew and changed.
- B. He did not have to wait long for generations of plants to grow.
- C. He used their growth rates as a benchmark for other plants he studied.
- D. He was able to use their growth rates as a genetic trait to study.

Q16) .A genotype that is labeled (Aa) is what type of genotype?

- A. Homozygous
- B. Heterozygous
- C. Dominant
- D. Recessive

Q17) .A genotype that is labeled (Aa) what does the letter (A) represent?

- A. Homozygous
- B. Heterozygous
- C. Dominant allele
- D. Recessive allele

MENDELIAN GENETICS

Q18) . A geneticist is studying a worm's body shape. He notes that (F) is the allele for fat, and (f) is the allele for thin. The phenotype of an (FF) worm would be:

- A. heterozygous B. homozygous C. thin **D. fat**

Q19) . In pole bean plants, tall (T) is dominant, and short (t) is recessive. If you cross a (TT) plant with a (tt) plant and allow their F1 generation to self-fertilize, the ratio of tall to short plants in the F2 generation would be:

- A. 4:0 **B. 3:1** C. 1:3 D. 0:4

Q20) . To a geneticist, (DD) would signify a :

- A. phenotype. B. recessive C. heterozygous **D. homozygous**

Q21) . The allele for brown (B) is dominant and the allele for blue (b) is recessive for eye color. Individual (Bb) has:

- A. brownish-blue eyes B. blueish-brown eyes C. blue eyes. **D. brown eyes**

Q22) . Assume that (S) is the allele for short fur and (s) is the allele for long fur. When you cross a homozygous dominant dog with a homozygous recessive dog, which are the correct percentages in the offspring?

- A. 75% short fur and 25% long fur
B. 100% long fur
C. 100% short fur
D. 50% short fur and 50% long fur

Q23) . (Zz) plants are pink. What ratio of pink to non-pink phenotype will you get by allowing two pink plants (Zz) to cross-fertilize?

- A. 4:0 **B. 3:1** C. 1:2 D. 2:2

Q24) . If (R) represents the allele for red, and (r) represents the allele for pink for the flower color trait, the physical expression of (Rr) or (RR) allele combination in the plant will represent a:

- A. genotype of red flowers
B. phenotype of red flowers
C. phenotype of pink flowers
D. genotype of pink flowers

MENDELIAN GENETICS

Q25) .In pea plants, the presence of the allele for yellow seed color masks the effect of the allele for green seed color. The allele for yellow seed color is said to be:

- A. strong. **B. dominant** C. weak D. homozygous

Q26) .In pea plants, the presence of the allele for yellow seed color masks the effect of the allele for green seed color. The allele for green seed color is said to be :

- A. strong. B. dominant **C. recessive** D. homozygous

Q27) .Cystic fibrosis is a hereditary disease that affects the lungs. Two alleles of the same kind must be present before the disease shows up in the offspring. What can we say about this disorder?

- A. It is recessive.** B. It is parental. C. It is dominant. D. It is heterozygous.

Q28) .A plant, homozygous dominant for round leaf shape, is crossed with one that is homozygous recessive for heart leaf shape. What will the F1 generation inherit from their parents for the leaf shape trait?

- A. One allele for round shape and one allele for heart shape**
B. Two alleles for heart shape and no alleles for round shape
C. There is not enough information to tell
D. Two alleles for round shape and no alleles for heart shape

Q29) .What adjective best describes genotype (aa)?

- A. Purple. B. Homozygous dominant **C. Homozygous recessive.** D. Heterozygous

Q30) .specific form of a single gene passed from parents to offspring.

- A. genotype B. phenotype **C . allele** D. chromosome

Q31) .we can conclude that in pea plants, the purple flower color is the _____ trait and the white flower color is the _____ trait.

- A. dominant, dominant
B. dominant, recessive
C. recessive, dominant
D. recessive, recessive

MENDELIAN GENETICS

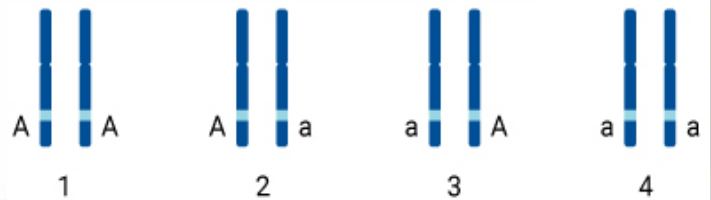
Q32) . Which of these genotypes is heterozygous?

A. 3 and 4

B. 2 and 3

C. 1 and 2

D. 1 and 4



Q33) . Which of these genotypes is homozygous dominant ?

A. 1

B. 2

C. 3

D. 4

Q34) . Which of these genotypes is homozygous recessive ?

A. 1

B. 2

C. 3

D. 4

Q35) . The cross between the genotypes (Bb) and (Bb) is a cross between two _____ plants.

A. dihybrid

B. homozygous

C. hybrid

D. truebred

Q36) . For the law of independent assortment to apply the way Gregor Mendel described it, which condition must be true?

The genes for the different traits do not have different alleles.

The genes for the different traits are not on the same chromosome.

The genes for the different traits are on the same chromosome.

The genes for the different traits do not undergo cross-over.

Q37) . When Mendel crossed a yellow-seed pea plant (YY) with a green-seed pea plant (yy) the percentage of the F1 generation had yellow seed is

A. 75%

B. 100%

C. 25%

D. 0%

Q38) . According to ONE of Mendel's law, genes for different traits are inherited independently of one another.

A. dominance

B. segregation

C. blending

D. independent assortment

Q39) . (BB) represents a _____ organism.

A. Homozygous

B. Heterozygous

C. Dominant

D. Recessive

Q40) . (Bb) represents a _____ organism.

A. Homozygous

B. Heterozygous

C. Dominant

D. Recessive

Mr. Yousof Mohammed



0562290423

@Bio_Vibes10

شرح الدروس والملازم باللغتين متوفر الان في قناة التليجرام

This content was created by Yousof Mohammed , Telegram : @BIOYOUSOF

MENDELIAN GENETICS

Q48) . If (B) represents the allele for a big beak and (b) for a small beak, what is the probability that the offspring of a (Bb) and (bb) cross will have a big beak?

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

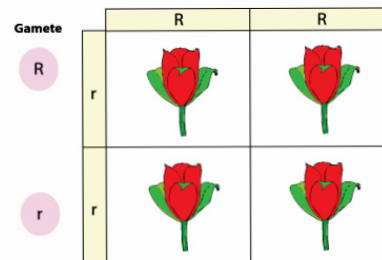
Q49) .Which tool do biologists use to predict the probability of certain traits in offspring from a genetic cross?

- A. Coin toss
B. Chromosome count
C. Family tree

D. Punnett square

Q50) .In the diagram of a monohybrid cross, which genotype represents a homozygous dominant individual?

- A. Rr
B. rr
C. RR
D. none



F₁ Genotype = 100% Rr F₁ Phenotype = Red

Q51) .A cross between two true-breeding pea plants, one purple(PP) and one white(pp), shows which probability for offspring with white flowers?

- A. 100% B. 25% **C. 0%** D. 75%

Q52) .The allele for pink (P) is dominant to the allele for white (p) in flamingos. The allele for loose (L) is dominant to that for tight (l) for the feather formation trait. A (PPLl) flamingo mates with a flamingo that is homozygous recessive for both traits.

What is the probability of producing offspring heterozygous for both traits?

- A. 75% B. 25%
C. 50% D. 0%

Gametes	PL	Pl	PL	Pl
pl	PpLl	Ppll	PpLl	Ppll
pl	PpLl	Ppll	PpLl	Ppll
pl	PpLl	Ppll	PpLl	Ppll
pl	PpLl	Ppll	PpLl	Ppll

Q53) . A pea plant (PpSs) is crossed with (ppss).

What is the probability that the offspring will have white flowers and constricted pods (ppss) ?

- A. 3/8 **B. 1/4** C. 1/8 D. 3/16

Q54) .This Punnett square shows the offspring from which parental genotypes?

- A. (Pp) and (pp)
B. (PP) and (Pp)
C. (PP) and (pp)
D. (Pp) and (Pp)

	?	?
?	PP	PP
?	Pp	Pp

MENDELIAN GENETICS

Q55) .A (PpSs) plant is crossed with (ppss).
(P) is purple and (p) is white flower color.
(S) is for inflated and (s) for constricted
pod shape.What is the phenotypic ratio for
this dihybrid cross?

- A. 6:4:4:2 B. 9:3:3:1
C. 12:2:1:1 D. 4:4:4:4

Gametes	PS	P _s	pS	ps
p _s	PpSs	Ppss	ppSs	ppss
ps	PpSs	Ppss	ppSs	ppss
ps	PpSs	Ppss	ppSs	ppss
ps	PpSs	Ppss	ppSs	ppss

Q56) .In this Punnett square, what is true about all the offspring?

- A. All are homozygous dominant
B. All are homozygous recessive
C. All are heterozygous
D. None share the same genotype

	p	p
P	Pp	Pp
P	Pp	Pp

Q57) .In a cross between white red-eyed rats (bbrr) and black, black-eyed rats (BbRr), what
is the phenotype of the Bbrr offspring?

- A. White, black-eyed B. White, red-eyed C. Black, black-eyed D. Black, red-eyed

Q58) .A purple-flowered pea plant crosses with a true-breeding white-flowered plant. If
50% of the offspring have white flowers, what does that tell us about the purple parent?

- A. It was self-fertilized
B. It is true-breeding
C. It is a hybrid
D. Neither parent had white flowers.

Q59) .A monohybrid cross is a genetic cross between two parents that differ in how many
traits?

- A. Two B. At least two C. One D. One or two

Q60) .A dihybrid cross is a genetic cross between two parents that differ in how many
traits?

- A. Two B. At least two C. One D. One or two

Q61) .In Punnett square,if the parents are heterozygous what is the genotypic ratio of off-
spring with genotypes PP: Pp: pp?

- A. 1:1:2 B. 2:1:1 C. 1:2:1 D. 3:1:0

MENDELIAN GENETICS

Q62) .For cats, the allele for tan fur (T) is dominant to that for white fur (t), and the allele for pointed ears (E) is dominant to that for rounded ears (e). A (TtEe) cat mates with a (ttee) cat. What is the probability that their offspring will have tan fur and pointed ears?

A. 1/4

B. 9/16

C. 3/16

D. 3/4

Q63) . Which of the following represents Mendel's experiment crossing true-bred white- and purple-flowered pea plants?

A. A hybrid cross

B. A monohybrid cross

C. A dihybrid cross

D. A test- cross

Q64) . In salamanders, the allele for silly (S) is dominant to wise (s), and naughty (N) is dominant to nice (n). If a homozygous wise, nice salamander mates with a homozygous silly, naughty salamander, what is the probability they will have wise, nice offspring?

A. 1/16

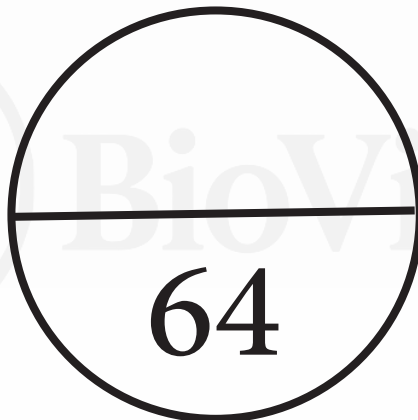
B. 0/16

C. 3/16

D. 9/16

انتهت الأسئلة

قيم/ي نفسك الان ، كم اجابة صحيحة اجبتها دون مساعدة ؟



Mr. Yousof Mohammed



0562290423

 @Bio_Vibes10

شرح الدروس والملازم باللغتين متوفر الان في قناة التليجرام

This content was created by Yousof Mohammed , Telegram : @BIOYOUSOF