

BIOLOGY

BOOKS - GR BATHLA & SONS BIOLOGY (HINGLISH)

MENDELIAN INHERITANCE

Multiple Choice Questions

- 1. Genetic is the branch of science which deals with the study of:
 - A. Cell function
 - B. Cell structure
 - C. Heredity and Variation
 - D. Relation between plant and environment

Answer: C



ward wall a calculation

2. The term 'genetics' was proposed by:	
A. T.H. Morgan	
B. W. Johannsen	
C. Gregor Mendel	
D. William Bateson	
Answer: D	
Watch Video Solution	
3. Like begets like' is an import+E90ant and universal phenomenon	
3. Like begets like' is an import+E90ant and universal phenomenon	
3. Like begets like' is an import+E90ant and universal phenomenon A. heredity	

D. pielotropy
Answer: A Watch Video Solution
4. Which is the functional unit of inheritance?
A. Gene
B. Intron
C. Cistron
D. Chromosome
Answer: A
Watch Video Solution
5. The term 'gene' was introduced by:

- A. Mendel
- B. Bateson
- C. Morgan
- D. Johannsen



- **6.** Identify the correct match between scientists and their contributions:
- Scientists Contributions
- A Gregor Mendel 1 Polygenic inheritance
- B Johannsen 2 Term 'Genetics'
- C William Bateson 3 Fundementals of herdity
- D Nilsson-Ehle 4 Term 'Gene'
- A. A=3, B=4, C=2, D=1
 - B. A=3, B=1, C=2, D=4
 - C. A=4, B=3, C=2, D=1
 - D. A=3, B=2, C=1, D=4



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7. Match the following and choose the correct combination from the options given:

Column II Column II

A J. B. S. Haldane 1 American geneticist

B Gregor Mendel 2 Dutch botanist

 ${\bf C}\quad {\bf Hugo}\; {\bf de}\; {\bf Vries} \qquad {\bf 3}\quad {\bf British}\; {\bf geneticist}$

D T. H. Morgan 4 Austrian monk

A. A=1, B=4, C=2, D=3

B. A=1, B=3, C=2, D=1

C. A=3, B=4, C=2, D=1

D. A=2, B=4, C=1, D=3

Answer: C



8. Genes which code for a pair of contrasting characters are called:
A. alleles
B. traits
C. factors
D. gametes
Answer: A
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9. Genes which code for a pair of contrasting characters are called:
9. Genes which code for a pair of contrasting characters are called:
9. Genes which code for a pair of contrasting characters are called: A. factors
9. Genes which code for a pair of contrasting characters are called:A. factorsB. alleles

Answer: B **Watch Video Solution** 10. Alleles are: A. chromatids B. chromosomes C. isomers of a gene D. alternate forms of a gene **Answer: D Watch Video Solution** 11. Alleles of a gene are found on: A. same chromosome

- B. any chromosomes C. homologous chromosomes D. nonhomologoes chromosomes **Answer: C Watch Video Solution**
- 12. Which statement about alleles is not true?
 - A. There may be several at a locus
 - B. One may be dominant over another
 - C. They may show incomplete dominance
 - D. They occupy different loci on the same chromosome



A. one allele of a gene
B. two alleles of a gene
C. all alleles of a gene
D. many alleles of a gene
Answer: A
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14. An allele is dominant if it is expressed in:
A. second generation
B. homozygous combination
C. heterozygous combination
D. both homozygous and heterozygous state

13. A gamete normally contains:



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- **15.** An allele is recessive if it is expressed only in:
 - A. first filial generation
 - B. homozygous combination
 - C. heterozygous combination
 - D. both homozygous and heterozygous state

Answer: B



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16. When an allele fails to express itself in the presence of another, the former is said to be:

A. epistatic B. recessive C. hypostatic D. dominant **Answer: B Watch Video Solution** 17. A recessive mutant is one which is: A. not expressed B. rarely expressed C. expressed only in heterozygous state D. expressed only in homozygous and hemizygous state Answer: D **Watch Video Solution**

18. Whether an allele is dominant or recessive depends on:
A. how common the allele is relative to other alleles
B. whether or not it is linked to other genes
C. which chromosome it is on
D. none of the above
Answer: D
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19. The contrasting pairs of factors in Mendelian crosses are called
A. alloloci
B. paramophs
C. allelomorphs

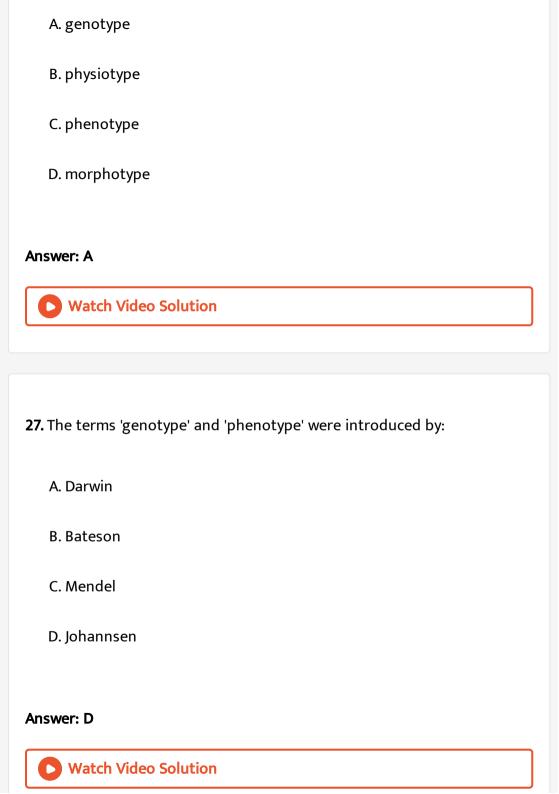
D. multiple alleles
Answer: C
Watch Video Solution
20. Allelomorphic pair implies
A. any two characters
B. sex-linked characters
C. a pair of contrasting characters
D. a pair of non-contrasting characters
Answer: C
Watch Video Solution
21. Alleles are:

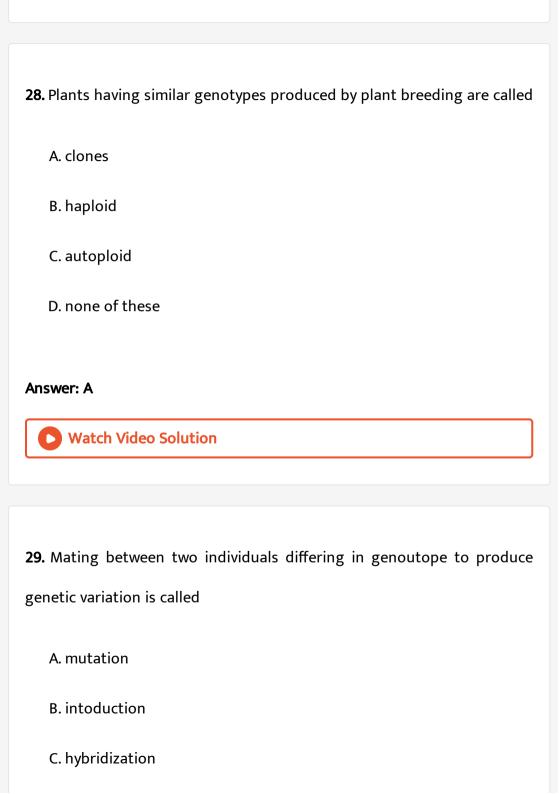
A. different molecular forms of a gene B. true breeding homozygotes C. different phenotype D. heterozygotes Answer: A **Watch Video Solution** 22. An organism with two identical alleles for a given trait is: A. dominant B. homozygous C. segregating D. heterozygous Answer: B **Watch Video Solution**

23. when different alleles of the same gene are present in an individual, it is a:
A. diploid
B. mosaic
C. homozygous
D. heterrozygous
Answer: D Watch Video Solution
24. The physical appearance of an individual is known as:
A. genotype
B. heterotype

D. morphotype
nswer: C
Watch Video Solution
5. The phenotype of an individual:
A. determines the genotype
B. is either monohybrid or dihybrid
C. is either homozygous or heterozygous
D. depends at least in part on the genotype
nswer: D
Watch Video Solution

26. The genetic complement of an organism is known as:





D. domestication

Answer: C



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30. When cross is made between two species of the same genus, then the cross is known as:

- A. intraspecific hybridization
- B. interspecific hybridization
- C. intergeneric hybridization
- D. intervarietal hybridization

Answer: B



31. A character expressed in hybrid is
A. recessive
B. dominant
C. co-dominant
D. epistatic
Answer: B
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32. Cross between unrelated group of organisms is called
A. hybrid
B. heterosis
C. test cross
D. back cross
D. Dack Cl 033

Answer: A



33. The phenomenon where the offspring superior than either of the parents is:

- A. influence
- B. inheritance
- C. penetrance
- D. heterosis (hubrid vigour)

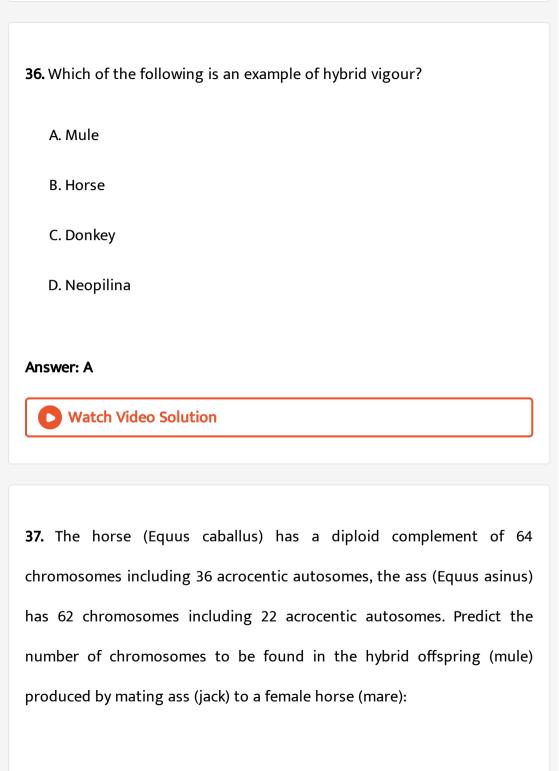
Answer: D

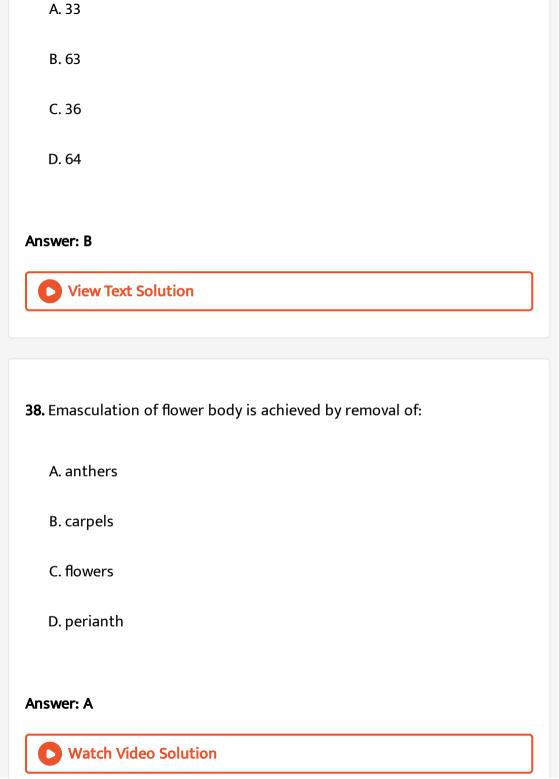


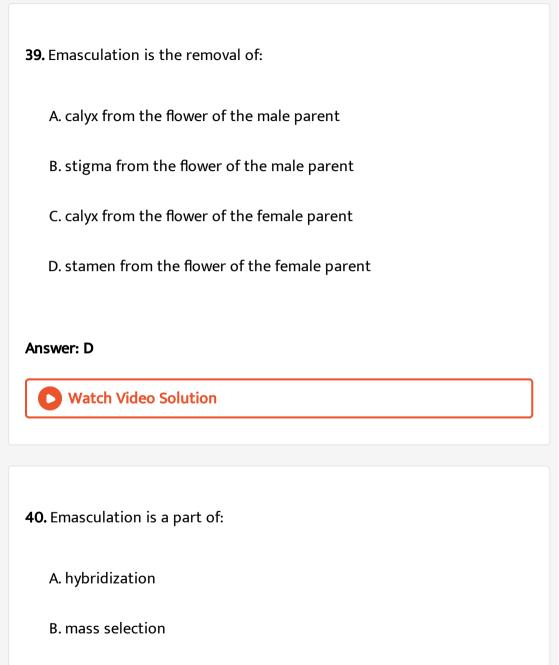
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34. Heterosis is referred to as the phenomenon of attainment of:

A. increased vigour in a hybrid B. organogenesis in plant C. production of spores D. localized over growth Answer: A **Watch Video Solution** 35. Hybrid vigour is mostly due to: A. homozygosity of pure characters B. seperiority of all the genes C. heterozugosity D. none of the above Answer: C **Watch Video Solution**







C. clonal selection

D. pure line selection
Answer: A
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41. The first great geneticist was:
A. Miller
A. Miller
B. Darwin
C. Mendel
D. Morgan
Answer: C
Watch Video Solution
42. Mender is called the father of:

A. Genetics B. Taxonomy C. Palaeobotany D. None of these Answer: A **Watch Video Solution** 43. What was Mender's most important contribution to the modern understanding of biology? A. The concept of meiosis B. The concept of chromosome C. Chromosome theory of heredity D. The concept that hereditary information comes in discrete units Answer: D



44. Gregor Johann	n Mendel was born ii	n:
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- A. Russia
- B. Austria
- C. Czechoslovakia
- D. United Kingdom

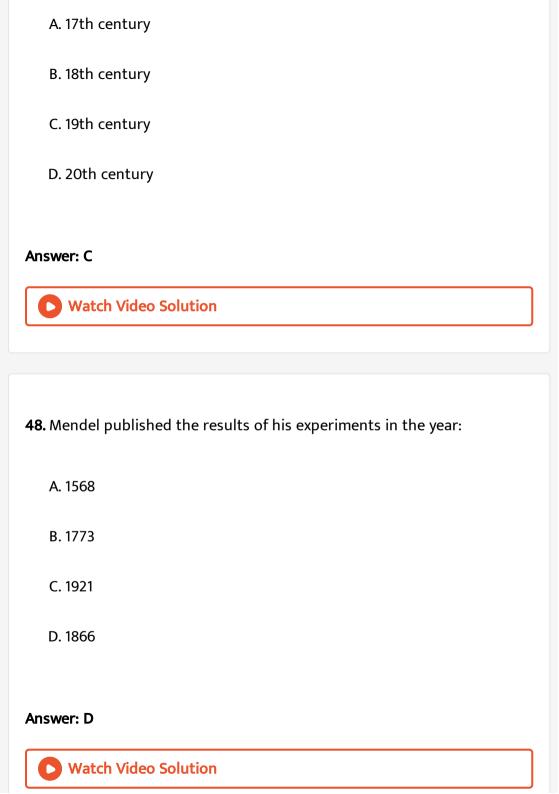
Answer: B



45. Gregor Johann Mendel was born in the year:

- A. 1815
- B. 1822
- C. 1884

D. 1901
Answer: B
Watch Video Solution
46. Gregor Johann Mender died in the year:
A. 1884
B. 1822
C. 1894
D. 1902
Answer: A
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47. Mendel worked in:



49. Mendelism is related with:		
A. meiosis during sexual reproduction		
B. mutations in living organisms		
C. heredity in living beings		
D. none of the above		
Answer: C		
Watch Video Solution		
50. Laws of inheritance were given by:		
50. Laws of inheritance were given by: A. Mendel		

D	Lama	rck
υ.	Larria	11 CK

Answer: A



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51. Which of the following plants were selected for Mendel's famous experiments on inheritance?

- A. Wild pea
- B. Sweet pea
- C. Garden pea
- D. Sweet potato

Answer: C



52. The organism chosen by Mendel to explain the laws of inheritance was:

A. Homo sapiens

B. Pisum sativum

C. Antirrhinum majus

D. Drosophia melanogaster

Answer: B



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53. Following are the statements, which are either true or false. Examine them and find out the incorrect answer. Mendel had selected Pisum sativum (garden pea) as his experimental tool because:

A. the hybrids remain infertile

B. the plants can be self-fertilized

- C. these small herbaceous plants can be easily cultivated
- D. there are several pairs of contrasting characters of allotrophic traits



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- **54.** Mendel chose pea plants because they:
 - A. were cheap
 - B. were easily available
 - C. have great economic importance
 - D. were having contrasting characters

Answer: D



55. Which one of the following was rediscoverer of Mendel's work?		
A. Muller		
B. Bridges		
C. Morgan		
D. Correns		
Answer: D		
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56. Mendel's work was rediscovered by three scientists in the year		
A. 1756		
B. 1865		
C. 1900		
D. 1910		

Answer: C



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57. In 1900 AD, three biologists independently rediscovered Mendel's principals. They were:

- A. Sutton, Morgan and Bridges
- B. Bateson, Punnett and Bridges
- C. Avery, MacLeod and McCarty
- D. de Vries, Correns and Tschermak

Answer: D



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58. Mendel's work was got republished in 'Flora' by

A. Correns B. de Vries C. Tschermak D. All of these **Answer: B** Watch Video Solution 59. How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments? A. Four B. Seven C. Five D. Six **Answer: C**

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60. The genes controlling the seven pea characters studied by Mendel are now known to located on how many different chromosomes?

A. Four

B. Seven

C. Five

D. Six

Answer: A

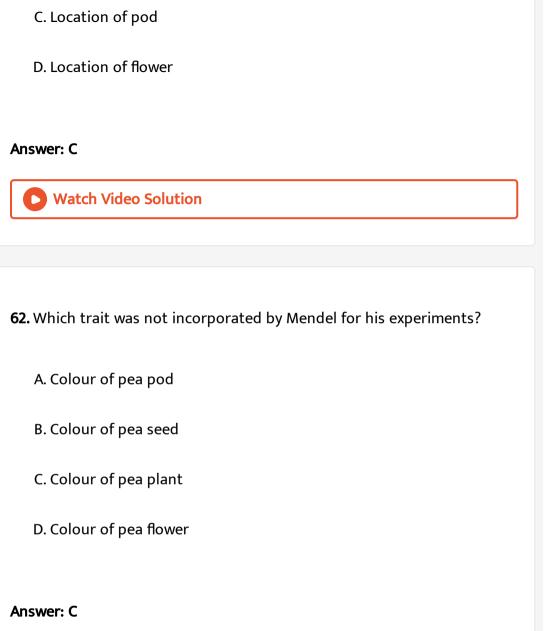


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61. Which of the following characters in pea was not chosen by Mendel?

A. Pod shape

B. Pod colour



- **63.** Which of the following are dominant characters according to Mendel?
 - A. Green coloured pod and rounded seed
 - B. Terminal fruit and wrinkled seed
 - C. White testa and yellow pericarp
 - D. Dwarf plant and yellow fruit

Answer: A



- **64.** Which of the following is considered as a recessive charater of

Mendel?

- A. Green pod
- B. Axial flower
- C. Round seed
- D. Wrinkled seed

Answer: D



65. In pea, wrinkling of seeds is due to nonformation of starch because of the absence of:

- A. diastase
- B. invertase
- C. amylase
- D. branching enzyme

Answer: D



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66. Which of the following characters selected by Mendel are recessive?

A. Yellow pod colour and wrickled seeds B. Green pod colour and dwarf plant C. Dwarf plant and round seeds D. Tall plant and axial flowers

Answer: A



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- 67. Which one of the following traits of garden pea studied by Mendel was a recessive feature?
 - A. Green pod colour
 - B. Round seed shape
 - C. Green seed colour
 - D. Axial flower position

Answer: C

68. The haploid chromosome number in Pisum sativum is:

A. 8

B. 10

C. 7

D. 14

Answer: C



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69. In Prisum sativum there are 14 chromosomes. How many pairs with different chromosomal compasition can be prepared?

A. 2^{7}

 $B. 2^{14}$

C. 7	
D. 14	
Answer: A	
Watch Video Solution	
70. Gens that are present on the same chromosome are called:	
A. linear	
P. syntanic	

C. synaptic

Answer: B

D. none of these

71. The genes for which of the following characters in pea plants are
syntenic?
A. Plant height
B. Pod shape
C. Flower position
D. All of these
Answer: D
Answer: D Watch Video Solution
Watch Video Solution
72. The genes for flower colour and seed colour in pea plant are located on the chromosome pair:
Watch Video Solution 72. The genes for flower colour and seed colour in pea plant are located

C. 5

Answer: A



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73. The genes for flower position and pod shape in pea plant are located on the chromosome pair:

- **A.** 1
- B. 4
- C. 5
- D. 7

Answer: B



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74. The procedure adopted by Mendel which was different from his predecessors in:

A. keeping breeding records

B. quantitative analysis of data

C. differentiating inherited traits

D. employing many traits at one time

Answer: B



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75. Which of the following contributed to the success of Mendel?

A. His knowledge of biology

B. Qualitative analysis of data

C. Observation of distinct inherited traits

D. Consideration of one character at a time

Answer: D



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76. The reason why pea plants were more siutable than dogs for Mendel's experiments?

- A. Dogs have many genetic traits
- B. Pea plants can be self fertilized
- C. There are no pedigree records of dogs
- D. The pea plants favour cross-fertilization

Answer: B



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77. A series of self-breeding generations having homozygous genotypes is called:

A. hybrid
B. pure line
C. phenocopy
D. heterozygote
Answer: B Watch Video Solution
78. Pure line breed refers to:
A. homozygosity only
B. heterozygosity only
C. heterozygosity and linkage
D. homozygosity and independent assortment
Answer: A
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79. Selection of homozygous plant is:
A. mass selection
B. mixed selection
C. pure line selection
D. none of these
Answer: C Watch Video Solution
80. Which of the following is true for Mendelism but not for Darwinism?
A. It was based on insufficient data

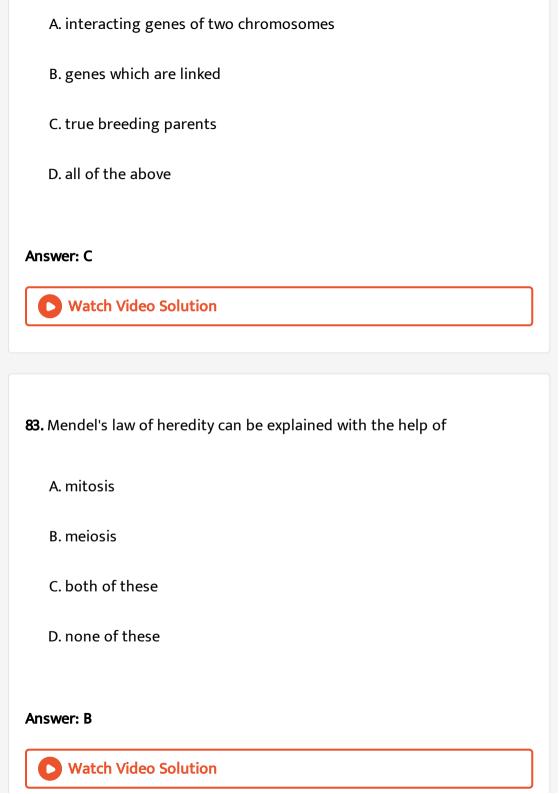
C. It influence human thought tremendously

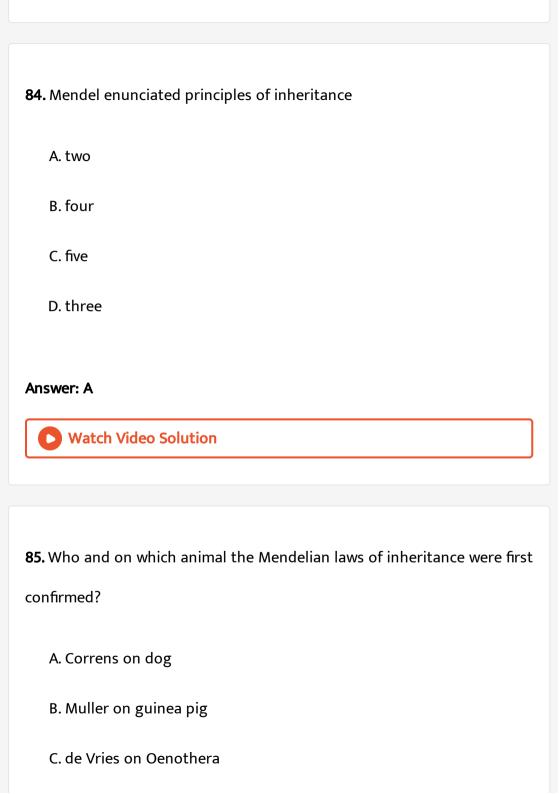
D. It gave well defined principles even in early stage
Answer: D
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81. The three principles of Mendelism are:
A. linkage, segregation and independent assortment
B. linkage, dominance-recessiveness and segregation
C. dominance-recessiveness, segregation and independent assortment
D. dominance-recessiveness, linkage and independent assortment

Answer: C

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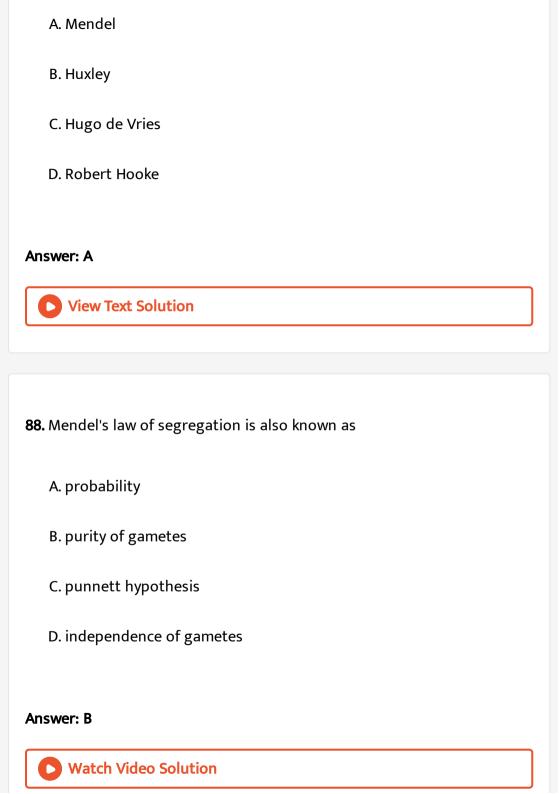
82. Mendel's laws are applicable only in:

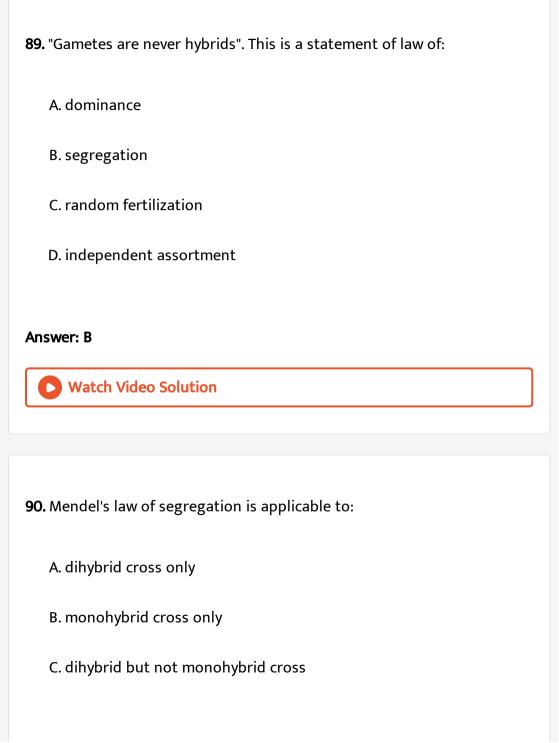




D. Morgan on Drosophila
nswer: D
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6. Mendel's first law is called:
A. law of variation
B. law of inheritance
C. law of segregation
D. law of independent assortment
nswer: C
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87. Law of segregation of gametes was proposed by:





D. both dihybrid and monohybrid cross
,

Answer: D



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91. Mendel's law of segregation was based on the separation of alleles in the garden pea during:

A. pollination

B. seed formation

C. gamete formation

D. embryonic development

Answer: C



92. Mendel's law is still true because it takes place in:

A. sexually reproducing plants

B. asexually reproducing plants

C. apomictic reproducing plants

D. all types of reproducing plants

Answer: A



93. If a plant heterzoygous for tallness is selfed, the F_2 generation has both tall and dwarf plants. This proves the principle of:

A. dominance

B. segregation

C. incomplete dominance

D. independent assortment

Answer: B



94. In order to explain the mode of inheritance of character through successive generations Mendel proposed that the two alternative factors for each character become separated during the formation of gametes and each factors has an equal chance of being transferred the offsprings. This phenomenon is known as:



95. When a cross is made between two parents with respect to a single character, it is called:

A. dihybrid

B. tihybrid

C. monohybrid

D. none of these
nswer: C
Watch Video Solution
6. Mendel formulated the law of purity of gametes on the basis of:
A. test cross
B. back cross
C. dihybrid cross
D. monohybrid cross
nswer: D
Watch Video Solution

97. Law of dominance-recessiveness is proved by:

A. back cross B. dihybrid cross C. monohybrid cross D. incomplete dominance **Answer: C Watch Video Solution** 98. Monohybrid cross involves individuals: A. with parent B. different in one trait C. different in two traits D. with two different parents Answer: B **Watch Video Solution**

99. Which of the following is the monohybrid ratio?

A. 3 : 1

 $\mathsf{B.}\;9\;:\;7$

C. 1 : 2

D.9:3:3:1

Answer: A



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100. When a tall pea plant (TT) is crossed with a dwarf plant (tt) what will be the ${\rm F}_2$ generation?

A. All tall plants

B. All dwarf plants

C. Both tall and dwarf plants in 3:1 ratio

D. Both tall and dwarf plants in 1: 1 ratio

Answer: C



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101. A monohybrid cross produced tall and dwarf plants in the ratio 3:1.

The genotype of the hybrids can be:

- A. $Tt \times TT$
- B. $Tt \times Tt$
- C. $tt \times TT$
- D. $tt \times Tt$

Answer: B



102. In a cross 45 tall and 14 dwarf plants were obtained. Genotypes of parents are: A. $Tt \times tT$ B. $TT \times tt$ C. $TT \times Tt$ D. $TT \times TT$ Answer: A **Watch Video Solution 103.** In a monohybrid cross, the genotypic ratio of F_2 is: A. 3 : 1

B.1 : 2 : 1

D.1:1:1:1

C. 4 : 0

Answer: B



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104. In all of Mendel's experiments, the two alleles causing a trait were:

- A. co_recessive
- B. co-dominant
- C. dominant-recessive
- D. incompletely dominant

Answer: C



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105. If two alleles come together, only one is able to express it self. This is called:

A. Law of dominance

B. Law of segregation

C. Law of incomplete dominance

D. law of independent assortment

Answer: A



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106. The character which appears at F_1 generation is:

B. dominant

A. recessive

C. incomplete recessive

D. incomplete dominant

Answer: B



107. A gene is said to dominant if:

A. it never expresses in any condition

B. it expresses only in heterozygous condition

C. it express its effect only in homozygous condition

D. it expresses both in heterozygous and homozygous condition

Answer: D



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108. Pure tall plant is crossed to dwarf plant. F_1 generation consists of only tall plants while F_2 generation has both tall and dwarf in ratio of 3:1.

The phenomenon is due to

A. heredity

B. dominance

C. inheritance
D. co-dominance
Answer: B
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109. Two crosses between the same pait of genotypes or phenotypes in
which the sources of the gametes are reversed in one cross, is known as:
A. test cross
B. reverse cross
C. dihybrid cross
D. reciprocal cross
Answer: D
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110. Pure red flowered and white flowered plants were crossed. It produced 120 offspring with

- A. All red flowered
- B. 90 white-flowered and 30 red-flowered
- C. 90 red-flowered and 30 white-flowered
- D. 60 white-flowered and 60 red-flowered

Answer: A



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111. A homozygous plant with red flower is crossed with recessive white.

Red is dominant over white. The progeny in the $F_{\mathbf{1}}$ generation will be:

- A. All red
- B. All white
- C. 50% red and 50% white

D.	75%	red	and	25%	white

Answer: A



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112. How many types of gametes will be produced in ${\rm F}_2$ generation of a monohybrid cross of Mendel?

A. 3

B. 4

C. 8

D. 16

Answer: B



113. Mendel's principle of segregation means that the germ cells always receive:

A. one pair of alleles

B. one quarter of the genes

C. one of the paired alleles

D. any pair of alleles

Answer: C



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114. A red-flowered pea plant was crossed with white-flowered plant. In F_1 generation all plants were red. It confirms that white colour is:

A. recessive character

B. dominant character

C. non genetic expression

D. none of the above
Answer: A
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115. One of Mendel's pure strains of pea plants had white flowers. How
many different kinds of eggs could such a plant produce with regard to
flower colour?
A. one
B. two
C. four
D. eight
Answer: A
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116. A woman with straight hair mates with man with curly hair who is
known to be heterozygous for that trait. What is he chance that their first
child will have curly hair?

A. No chance

B. One in two

C. It is certain

D. One in four

Answer: B



117. Percentage of heterozygous individuals obtained from selfing Rr individuals is:

A. 25

B. 75

C.	50
D.	100

Answer: C



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118. If the frequency of a recessive phenotype is a stable population is

25%, the frequency of recessive allele in the population would be:

A. 0.75

B. 0.5

C. 0.375

D. 0.25

Answer: B



119. Black coat of guinea pigs is a dominant trait, white is the recessive trait. When a pure black guinea pig is crossed to a white one, what fraction of the black ${\rm F}_2$ is expected to be heterozygous?

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

Answer: C



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120. Which statement about Mendel's cross of RR peas with rr peas is not true?

- A. This is an example of a monohybrid cross
- B. Three genotypes are observed in \boldsymbol{F}_2 generation

- C. Three phenotypes are observed in F_2 generation
- D. Each parent can produce only one type of gamete

Answer: C



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121. A heterozygous round seeded (Rr) plant is crossed to recessive wrinkled (rr) seeded plant. The progeny would be:

- A. 20 rounded : 99 wrinkled
- B. 99 rounded : 301 wrinkled
- C. 301 rounded : 100 wrinkled
- D. 303 rounded : 301 wrinkled

Answer: D



122. A pure tall and a pure dwarf plant were crossed to produce offsprings. Offsprings were self crossed, then find out the ratio between true breeding tall to true breeding dwarf?

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

Answer: A



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123. In human being, brown eye (B) is dominant over blue eye (b) A browneyed couple has a blue-eyed child. What is the possible genotypes of the couple?

A. Bb×bb

- $B. Bb \times bB$
- C. BB×bb
- D. $BB \times bB$

Answer: B



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124. Which of the following crosses and resultant phenotypic ratios are mismatched?

- Cross Phenotypic ratio A. (a) $Tt \times Tt$ - 3:1
- Cross Phenotypic ratio
- B. (b) $tt \times Tt 2:1$
- Cross Phenotypic ratio C. (c) $\text{TtYy} \times \text{ttyy}$ - 1:1:1:1
- $\begin{array}{ccc} \text{Cross} & & \text{Phenotypic ratio} \\ \text{TtYy}{\times}\text{TtYy} & & 9{:}\,3{:}\,3{:}\,1 \end{array}$

Answer: B



125. Match the items given in column I with those listed in column II. Choose the answer with correct combination of alphabets of the two columns:

Column II Column II

A Monohybrid cross p T and t

B Test cross q TT

C Alleles r TT×tt

D Homozygous tall s tt t Tt×tt

A. A=r, B=t, C=s, D=q

B. A=t, B=r, C=q, D=s

C. A=r, B=t, C=p, D=q

D. A=r, B=p, C=t, D=q

Answer: C



126. In humans, freckles is dominant over no freckles. A man with freckles marries a woman having freckles, but the children have no freckles. What chances did each child have for freckles?

- A. 0.25
- B. 0.5
- C. 0.75
- D. 1

Answer: C



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127. In fruits flies, L = long wings and l = short wings. The offsprings exhibit a 1:1 ratio when a long-winged fly is crossed with short-winged fly. What is the genotype of parents?

A. Ll, Ll

- B. LL, Ll
- $\mathsf{C}.\,Ll,\,LL$
- D. Ll, ll

Answer: D



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128. In the garden pea, round seeds are dominant over wrinkled seeds. An investigator crosses a plant having round seeds with a plant having wrinkled seeds. He counts 400 offspring. How many of the offspring have wrinkled seeds if the plant having round seeds is a heterozygote?

- A. 200
- B. 250
- C. 300
- D. all 400

Answer: A



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129. In human, pointed eybrows (B) are dominant over smooth eyebrows (b). Sita's father has pointed eybrows, but she and her mother have smooth. What is the genotype of the father?

A. bb

B. BB

C. Bb

D. any one of these

Answer: C



130. A pea plant parent having violet coloured flowers with unknown genotype was a plant having white coloured flowers in the progeny 50% of the flowers were violet and 50% were white. The genotype constitution of the parent having violet coloured flower was:

- A. homozygous
- B. merozygous
- C. hemizygous
- D. heterozygous

Answer: D



Watch Video Solution

131. A tobacco plant heterozygous for recessive character is self-pollinated and 1200 seeds are subsequently germinated. How many seedings would have the parental genotype?

A. 300 B. all C. 600 D. none of these **Answer: C Watch Video Solution** 132. If a cross is made between AA and aa, the nature of ${\rm F}_1$ progeny will be: A. genotypically aa, phenotypically A B. genotypically Aa, phenotypically a C. genotypically AA, phenotypically a D. genotypically Aa, phenotypically A Answer: D

133. Ratio of progeny when a red coloured heterozygote is crossed with a white coloured plant in which red colour in dominant to white colour:

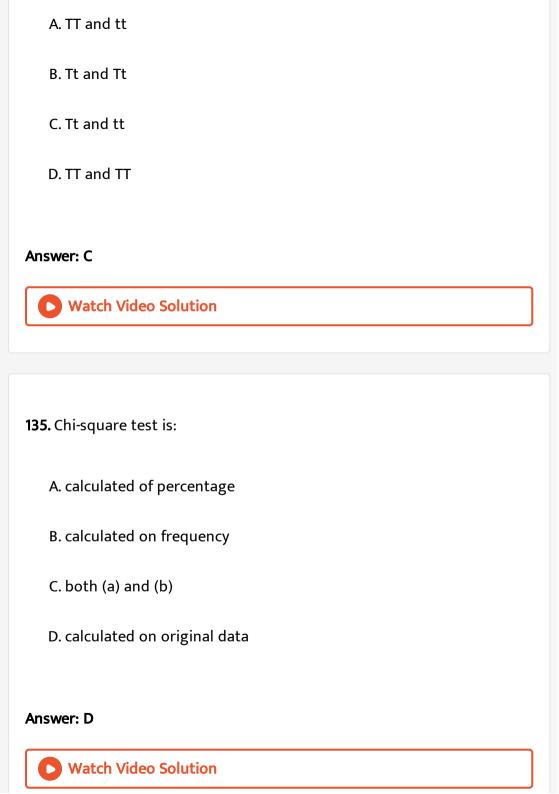
- A.3:1
- B. 1:1
- C. 1: 2: 1
- D. 9:3:3:1

Answer: B



Watch Video Solution

134. Two pea plants were subjected cross pollination. Of the 183 plants produced in the next generation, 94 plants were found to be all and 89 plants were found to be dwarf. The genotypes of the two parental plants are likely to be:



136. Segregation of Mendelian factors (no linkage no crossing over) occurs during:

A. dipotene

B. anaphase I

C. metaphase I

D. anaphase II

Answer: B



Watch Video Solution

137. When an F_1 individualk is crossed with its either of the two parents, the cross is known as:

A. test cross

B. back cross

C. reciprocal cross
D. monohybrid cross

Answer: B



Watch Video Solution

138. Back cross involves:

A. crossing between the two parents

B. crossing between two \boldsymbol{F}_1 hybrids

C. crossing between two hybrids in F_2

D. crossing the $F_{\mathbf{1}}$ hybrid to either of the parents

Answer: D



139. When a cross is made between off srpings and one of its parents, it is known as:

A. back cross

B. dihybrid cross

C. reciprocal cross

D. monohybrid cross

Answer: A



Watch Video Solution

140. In a back cross, a ${\cal F}_1$ hydrid is crossed with dominant parent , the offsprings :

A. All will be tall

B. 3 tall: 1 short

C. 1 tall: 1 short

D.	1	tall	:	3	short	

Answer: A



Watch Video Solution

- **141.** The back cross of F_1 hybrid with the recessive parent is called :
 - A. Monohydrid cross
 - B. Reciprocal cross
 - C. dominant-recessive cross
 - D. Punnett square cross

Answer: A



142. If an organism is crossed with homozygous recessive recesive individual, it is called:

A. back cross

B. test cross

C. simple cross

D. monohybrid cross

Answer: B



143. The genotype of a plant showing the dominat phenotype can be determined by:

A. test cross

B. back cross

C. dihybrid cross

D. perdigree analysis
Answer: A
Watch Video Solution
144. A cross used to ascertian whether a dominant is homozygous or
heterozygous is termed :
A. test cross

B. Reciprocal

C. dihybird cross

D. hybrid cross

Watch Video Solution

Answer: A

145. Cross between recessive parent and F_1 hybrid is called :
A. test cross
B. back cross
C. reciprocal cross
D. monohybird cross
Answer: A
Watch Video Solution
146. Tt \times tt cross is called:
A. back cross
B. test cross
C. reciprocal cross
D. hybrid cross

Answer: B



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147. Test cross is cross of:

- A. F_1 individual with any parent
- B. F_1 individual with F_1 individual
- $\mathsf{C}.\,\mathsf{F}_1$ individual with homozygous recessive
- $\mbox{\rm D.}\, F_1$ individual with heterozygous recessive

Answer: C



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148. The term test cross refers to a cross between:

A. F_1 hybrid and F_2 individual

B. F_1 hybrid with another F_1 hybrid

C. F_1 hybrid and either of the parents

D. F_1 hybrid and a double recessive individual

Answer: D



Watch Video Solution

149. In a test cross we perfrom a cross between:

A. $F_1 imes ext{ any parent}$

B. $F_2 imes {
m recessive parent}$

C. $F_1 imes ext{ recessive parent}$

D. recessive parent \times dominant parent

Answer: C



150. A test cross distinguishes between: A. two homozygous froms B. two heterzygous froms C. a homozygous recessive and heterozygous from D. a homozygous dominat and heterozygous from **Answer: D Watch Video Solution** 151. Which of the following pairs on hybridization produces 1 :1 phenotypic ratio? A. Tt, tt B. TT, Tt C. TT, tt D. None of these

Answer: A



Watch Video Solution

152. Heterozygosity of F_1 hydrids can be determined by :

- A. test cross
- B. back cross
- C. reciprocal cross
- D. hybrid cross

Answer: A



Watch Video Solution

153. Which statements about a test cross is not true?

A. It tests whether an unknown individual is homozygous or heterozygous

B. The test individual is crossed with a homozygous recessive individual

C. If the test individual is heterozygous, the progeny will have a $1\colon 1$ ratio

D. If the test individual is homozygous, the progeny will have a 1:1

Answer: D



154. A cross between ${\rm F}_1$ hybrid and a recessive parent gives a ratio of:

A. 3:1

B.2:1

C. 1:1	
D. 4:1	
Answer: C	
Watch Video Solution	
155. Phenotypic ratio of monohybrid test cross is:	
A. 1:1	
B. 3:1	

C. 1:2:1

Answer: A

D. None of these

156. A cross in which an organism showing a dominant phentype is crossed with the recessive parent in order to know its genotype is called:

- A. back cross
- B. test cross
- C. dihybrid cross
- D. monohybrid cross

Answer: B



Watch Video Solution

157. Heterozygous purple flower is crossed with recessive white flower.

The progeny has the ratio:

- A. All white
- B. All purple
- C. 50% purple and 50% white

D. 75% purple and 25% white

Answer: C



Watch Video Solution

158. Heterozygous tall plant (Tt) is crossed with homozygous dwarf (tt) plant. Then what will be the percentage of dwarf plants in the next generation?

- A. 0.25
- B. 1
- C. 0
- D. 0.5

Answer: D



159. To determine heterozygosity or homozygosity a plant must be crossed with:

A. recessive

B. dominant

C. homozygous dominant

D. heterozygous dominant

Answer: A



160. Test cross is a cross between:

A. hybrid \times recessive parent

B. hybrid $\, imes\,$ dominant parent

C. hybrid \times hybrid parent

D. two distantly related species

Answer: A



Watch Video Solution

161. Tt mates with tt. What will be characteristic of offsprings?

- A. All dominant
- B. 25% recessive
- C. 50% recessive
- D. 75% recessive

Answer: C



Watch Video Solution

162. When heterozygous red (dominant) flower is crossed with white flower the progeny would be:

- A. 450 red : 250 white
 - B. 350 red : 350 white
 - C. 380 red : 320 white
 - D. none of the above

Answer: B



Watch Video Solution

- **163.** Mating of an organism to a double recessive in order to determine whether it is homozygous for a character under consideration is called:
 - A. test cross
 - B. back cross
 - C. dihybrid cross
 - D. reciprocal cross

Answer: A

164. Test cross involves:

A. crossing the F_1 hybrid with a double recessive genotype

B. crossing between two genotypes with dominant trait

C. crossing between two genotypes with recessive trait

D. crossing between two \boldsymbol{F}_1 hybrids

Answer: A



Watch Video Solution

165. When tall and dwarf plants are crossed, from which cross 1: 1 ratio is obtained?

A. tt and tt

B. Tt \times Tt

D. TT and Tt
Answer: C
Watch Video Solution
166. Mendel's second law is:
A. segregation
B. dominance
C. polygenic inheritance
D. independent assortment
Answer: D
Watch Video Solution

C. Tt and tt

167. Mendel's law of independent assortant can be domostrated by:
A. test cross
B. dihybrid cross
C. back cross
D. monohybrid cross
Answer: B
Watch Video Solution
168. A cross between two pairs of alleles is called:
A. linkage
B. dihybrid cross
C. crossing over
D. monohybrid cross

Answer: B



Watch Video Solution

169. A cross between plants having RRYY and rryy compasition will yield plants with:

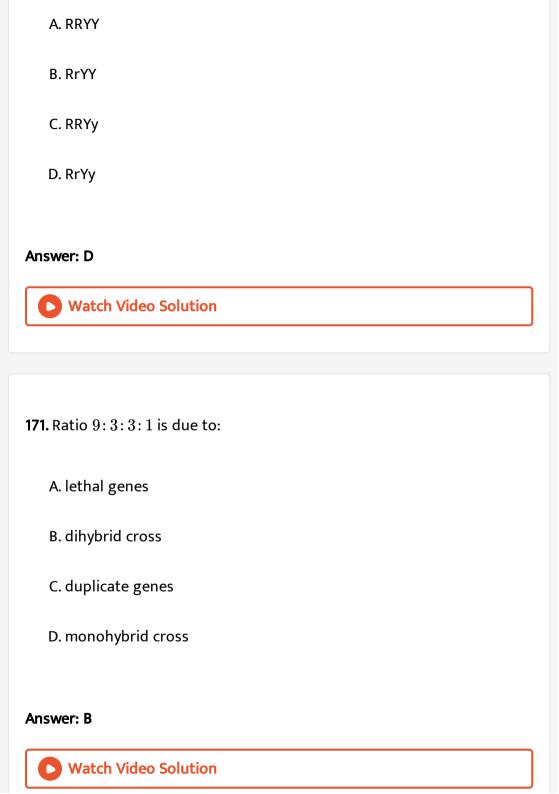
- A. round and yellow seeds
- B. round and green seeds
- C. wrinkled and green seeds
- D. wrinkled and yellow seeds

Answer: A



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170. Organism heterozygous for two genes shall be:



172. Dihybrid test cross ratio is

A. 1:2:1

B. 1:1

C. 9:3:4

D. 9:3:3:1

Answer: D



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173. Phenotypic dihybrid ratio in F_2 generation is:

A. 1:3

B. 9:3:3:1

C. 1:2:1

D. 1:1:1:1

Answer: B



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174. In F_2 the phenotypic ratio of dihybrid cross is:

A. 1:1:1:1

B. 3:1

C. 9: 3: 3: 1

D. 9:3:4

Answer: C



175. A tall pea plant with round seeds (TTRR) is crossed with a dwarf wrinkle seeded plant (ttrr). F_1 has tall plants with rounded seeds. What is the proportion of dwarf plants with wrinkled seeds in F_2 generation

- A. 0
- B.1/2
- C.1/4
- D. 1/16

Answer: D



Watch Video Solution

176. A dihybrid for qualitative trait is crossed with homozygous recessive individual of its type, the phenotypic ratio is:

- A. 1:2:1
- B.3:1

C. 1:1:1:1

D.9:3:3:1

Answer: C



Watch Video Solution

177. When two hybrids of rrTt and Rrtt are crossed, the phenotypic ratio of offspring shall be:

A. 1:1

B. 1:1:1:1

C.3:1

D. 9:3:3:1

Answer: B



178. Tall pea plant with red flower crossed to dwarf with white flower yields only tall red plants. A test cross shall give a ratio of:

A. 1:1

B. 1:1:1:1

C. 3:1

D. 9:3:3:1

Answer: B



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179. Ratio 1:1:1:1 is obtained from a cross of

A. RRYY \times rryy

B. RRYy \times rrYy

C. RrYY \times Rryy

D. RrYy \times rryy

Answer: D



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180. Phenotypic ratio of dihybrid test cross is:

A. 15:1

B. 3:1

C. 9:3:3:1

 $\mathsf{D}.\,1\!:\!1\!:\!1\!:\!1$

Answer: D



Watch Video Solution

181. In a dihybrid cross, pure homozygous plants will be:

A. 2

- B. 1
- C. 3
- D. 9

Answer: A



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182. Genotypic ratio of dihybrid cross is:

- A. 1: 2: 2: 4: 3: 1: 2: 1
- ${\tt B.\,1:\,3:\,2:\,4:\,2:\,1:\,2:\,1:\,2}$
- C. 1: 2: 2: 4: 2: 1: 2: 1: 1
- D. 1:2:2:4:2:2:1

Answer: C



183. In pumpkins, yellow (Y) is dominant over white, big (B) is dominant over small (b). What is the expected phenotypic ratio of the offsprings when pumpkins, heterozygous for both traits are crosses?

- A. 9:7
- B. 1:1:1:1
- C.9:3:4
- D. 9:3:3:1

Answer: D



Watch Video Solution

184. In a cross between AABB $\, imes$ aabb, the ratio of F_2 genotype between AABB, AaBB,Aabb and aabb would be

- A. 1:1:1:1
- B.9:3:3:1

C. 1: 2: 2: 4

D. 1:2:2:1

Answer: C



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185. Mendel's law of independent assortment is based on ${\cal F}_2$ ratio of

A. 3:1

B. 1:2:1

C. 2:1

D. 9:3:3:1

Answer: D



186. Female AaBb is crossed with male Aabb. The gametes shall be:

A. Female Aa, and Ab, male Ab

B. Female AB, ab, Ab, aB and male Ab

C. Female Aa, Bb, ab, AB and male Ab

D. Female AB, ab, Ab, aB and male AA, bb

Answer: B



187. From a cross AABb \times aaBb, the genotypes AaBB, AaBb, Aabb, aabb will be obtained in the following ratio:

A. 1:2:1:0

B. 1:1:1:1

 $\mathsf{C}.\,0\!:\!3\!:\!1\!:\!0$

 $\mathsf{D}.\,1\!:\!1\!:\!1\!:\!0$

Answer: A



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188. In a certain plant, red fruit (R) is dominant over yellow fruit (r) and tallness (T) is dominant over dwarfness (t). If a plant with RRTt genotype is crossed with a plant that is rrtt, what will be the percentage of tall plants with red fruits in the progeny?

- A. 1
- B. 0.25
- C. 0.5
- D. 0.75

Answer: C



189. In guinea pigs, smooth coat (S) is dominant over rough coat (s) and black coat (B) is dominant over white coat (b). In the cross SsBb \times SsBb, how many of the offsprings will have a smooth black coat an average?

- A. 1/16
- B.3/16
- C.9/16
- D. 12/16

Answer: C



Watch Video Solution

190. In humans, short fingers and discontinuous hairline are dominant over long fingers and continuous hairline. A heterozygote in both regards reproduces with a similar heterozygote. What is the chance of any one child having the same phenotype as the parents?

A. 12/16B.9/16C.3/16D. 1/16**Answer: B Watch Video Solution** 191. A human male produces sperms with the genotypes AB, Ab, aB, and ab pertaining to two diallelic characters in equal proportions. What is the corresponding genotype of this person? A. AABb B. AaBb C. AABB D. AaBB

Answer: B



Watch Video Solution

192. The cytological event that corresponds to Mendel's law of independent assortment is seen in:

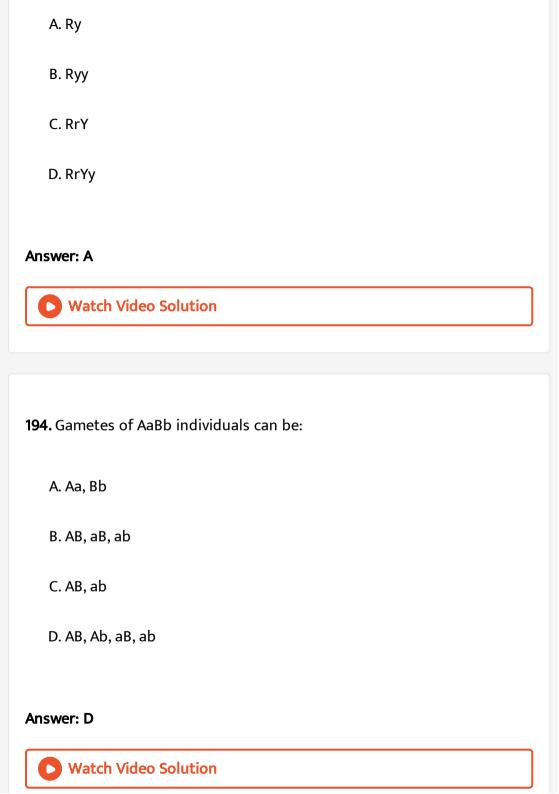
- A. anaphase I
- B. anaphase II
- C. metaphase I
- D. metaphase II

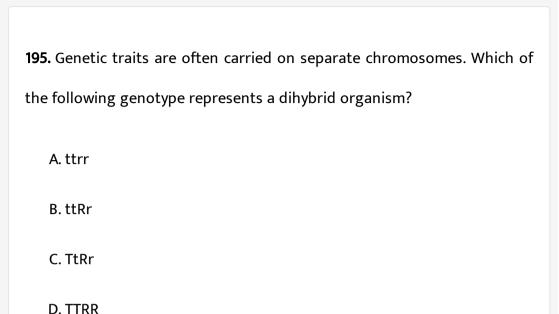
Answer: A



Watch Video Solution

193. Which of these could be a normal gamete?





Answer: C



196. An individual heterozygous for two alleles (CcDd) produce one million sperms, how many of the sperms will have both dominant alleles?

A. 1 million

B. 0.50 million

C. 0.25 million

D. 0.75 million

Answer: C



Watch Video Solution

197. Probability of genotype TTrr in F_2 generation of a dihybrid cross is:

A. 1/16

 $\mathsf{B.}\,3\,/\,16$

 $\mathsf{C.}\,9/16$

 $\mathsf{D.}\,6\,/\,16$

Answer: A



198. Had Mendel decided to study those traits together which are determined by linked genes, he would not have found out:

- A. dominance
- B. crossing over
- C. principle of segregation
- D. principle of independent assortment

Answer: D



- 199. Mendelian recombinations are due to:
 - A. mutation
 - B. pleiotrophy
 - C. crossing over
 - D. independent assortment

Answer: D Watch Video Solution

200. Independent assortment means:

- A. separation of parental characters
- B. segregation of parental characters
- C. recombination of parental characters
- D. non-separation of parental characters

Answer: C



Watch Video Solution

201. In Mendelism, linkage was not observed due to:

A. synapsis

C. crossing over			
D. independent assortment			
Answer: D			
Watch Video Solution			
202. Mendel did not notice/ An exception to Mendel's laws:			
A. linkage			
B. dominance			
C. segregation			
D. independent assortment			
Answer: A			
Watch Video Solution			

B. mutation

203. If Mandel had studied 7 traits using a plant with 12 chromosomes instead of 14, he would have

- A. He would have discovered sex linkage
- B. He would have mapped the chromosome
- C. He would have discovered blending or incomplete dominance
- D. He would not have discovered the law of independent assortment

Answer: D



Watch Video Solution

204. Which of the following demonstrates the 'laws of independent assortment'?

- A. test cross
- B. back cross
- C. Trihybrid cross

Answer: C			
Watch Video Solution			
205. Independent assortment of genes does not take place when:			
A. genes are located on homologous chromosomes			
B. genes are linked and located on the same chromosome			
C. genes are located on nonhomologous chromosomes			
D. all of the above			
Answer: B			
Watch Video Solution			

206. Law of Mendel which is not completely applicable is:

D. Monohybrid cross

A. co-dominance B. law of dominance C. law of segregation D. law of independent assortment Answer: D **Watch Video Solution** 207. Mendel's law of independent assortment is applicable for: A. all linked genes only B. all genes in all organism C. all genes of pea plant only D. all non-linked genes only Answer: D **Watch Video Solution**

208. In dihybrid crosses the F_1 heterozygous plants are self fertilized to produce an F_2 generation and if offsprings are computed in Punnett square the phenotypic F_2 ratio as per Mendel's independent assortment will yields:

- A. 9:7
- B. 9:3:3:1
- C.9:6:1
- D. 12:3:1

Answer: B



Watch Video Solution

209. The ratio of 9:3:3:1 is due to

A. segregation of characters

- B. crossing over of chromosomes
- C. independent assortment of genes
- D. homologous pairing between chromosomes

Answer: C



Watch Video Solution

210. Which type of gametes are produced by RrYy?

- A. ry, ry, rY, ry
- B. RY, Ry, rY, ry
- C. RY, RY, rY, rY
- D. RY, RY, RY, RY

Answer: B



211. A cross involving \mathbf{F}_1 hybrid and a double recessive parent is:
A. test cross
B. dihybrid cross
C. multiple cross
D. trihybrid cross
Answer: A
Watch Video Solution
212. The dihybrid test cross ratio is:
A. 1:1
B. 3:1
C. 1:2:1
D. 1:1:1:1

Answer: D



Watch Video Solution

213. In a cross between individuals with genotypes TtRr, if the resulting number of offspring is 16, identify the number of genotypes with TtRr and TtRR amongst them:

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

Answer: A



214. In a plant, red fruit (R) is dominant over yellow fruit (r) and tallness (T) is dominant over shortness (t). If a plant with RRTt genotype is crossed with a plant that a rrtt:

- A. 25% will be tall with red fruit
- B. 50% will be tall with red fruit
- C. 75% will be tall with red fruit
- D. all the offspring will be tall with red fruit

Answer: B



Watch Video Solution

215. How many different types of gametes can be formed by F_1 progeny resulting from the following cross?

AABBCC \times aabbcc

A. 3

- B. 8
 - C. 27
 - D. 64

Answer: B



Watch Video Solution

- 216. A trihybrid cross is made between two yeasts, both with genotypes
- AsBbCc. What proportion of the offspring will be of the genotypes aabbcc?
 - A. 0
 - B.1/16
 - C.1/4
 - D. 1/64

Answer: D

217. A plant of F_1 generation with genotype AABbBB. On selfing of this plant what is the phenotypic ratio in F_2 generation?

- A. 1:1
- B.3:1
- C. 9: 3: 3: 1
- D. 27:9:9:9:3:3:3:1

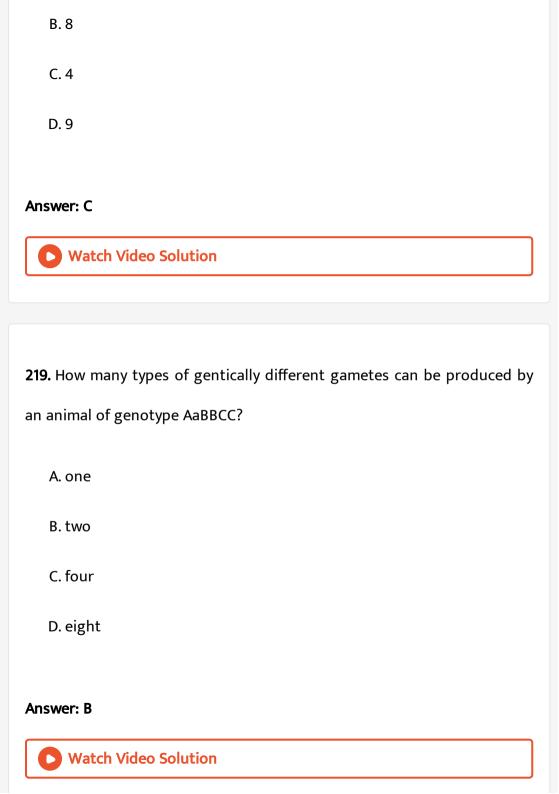
Answer: B

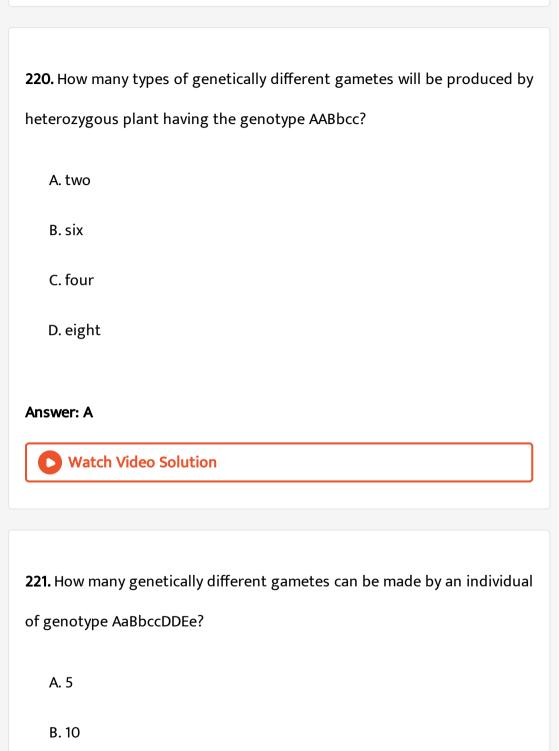


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218. How many difference types of gametes can be produced by an organism of the genotype AaBBCc?

A. 3





C. 8	
D. 32	
Answer: C	
◯ Wat	tch Video Solution
222. If an	individual of gen

222. If an individual of genotype AaBbCcDd is test crossedk, how many different phenotypes can appear in progeny?

A. 4

B. 12

C. 8

D. 16

Answer: D



223. If individuals	of genotype	AaBbCc	are	intercrossed,	how	many
different phenotype	s can occur in	their prog	geny	?		
A. 3						

B. 8

C. 6

D. 16

Answer: B



Watch Video Solution

224. If individuals of genotype AaBbCc are intercrossed, how many different genotypes can occur in their progeny?

A. 6

B. 16

C. 8

D.	27
D .	~ '

Answer: D



Watch Video Solution

- 225. How many phenotypes will be obtained from a test cross of AaBbCc?
 - A. 4
 - B. 16
 - C. 8
 - D. 32

Answer: C



226. Number of genotypes produced when individuals of genotype 'YyRrTt' are crossed with each other

A. 4

B. 45

C. 28

D. 27

Answer: D



Watch Video Solution

227. A self-fertilizing trihybrid plant forms:

A. 4 different gametes and 16 different zygotes

B. 8 different gametes and 32 different zygotes

C. 8 different gametes and 64 different zygotes

D. 8 different games and 16 different zygotes

Answer: C



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228. Cross between homozygous black rough (BBRR) guinea pig and homozygous white smooth guinea pig (bbrr) produced black and rough animals in F_1 generation. Presuming the genes to be present on different chromosomes, the percentage of F_2 individuals which are heterozygous for both the gene pairs would be

- A. 0.25
- B. 0.5
- C. 0.75
- D. 0.35

Answer: A



229. For finding the different types of gametes produced by genotype
AaBb, it should be crossed with genotype
A. aabb
B. aaBB
C. AABB
D. AaBb
Answer: A
Allswer: A
Watch Video Solution
230. When heterozygous tall plant is crossed with homozygous tall, fate

of progeny to be heterozygous tall is:

- A. 0.2
- B. 0.25
- C. 0.5

Answer: C



Watch Video Solution

231. When proportion of the offspring of the cross AABBcc \times AaBbCc will be completely heterozygous if all genes segregate independently?

- A. 1/2
- B.1/4
- C.1/8
- D.1/16

Answer: C



 $\begin{tabular}{ll} \textbf{232.} The total number of progeny obtained through dihybrid cross of } \\ \textbf{Mendel is 1280 in } F_2 \ \textbf{generation.} \ \textbf{How many are recombinants?} \\ \end{tabular}$

A. 240

B. 360

C. 480

D. 720

Answer: C



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233. How many different kinds of gametes will be produced by a plant having the genotype AABbCC?

A. Two

B. Three

C. Four

Answer: A



Watch Video Solution

234. How many types of gametes may be produced by genotype

$$D/d\!:\!E/e\!:\!F/f$$
?

- A. 3
- B. 6
- C. 8
- D. 27

Answer: C



 $\begin{tabular}{ll} \textbf{235.} A trihybrid cross involve three pair of characters which will give rise \\ to the F_1 hybrids which are heterozygous for three genes. How many \\ types of gametes will be produced in both male and female? \\ \end{tabular}$

- A. 2
- B. 4
- C. 6
- D. 8

Answer: D



Watch Video Solution

236. In Mendel's experiments with Garden Pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledons (YY) was dominant over green cotyledons(yy). What are expected phenotypes in F_2 generation RRYY \times rryy?

A. Round seeds with yellow cotyledons, and wrinkled seeds with yellow cotyledons B. Only wrinkled seeds with yellow cotyledons C. Only wrinkled seeds with garden cotyledons D. Only round seeds with green cotyledons Answer: A **Watch Video Solution** 237. which genotype represents a true hybrid condition? A. TTrr B. TtRr C. TTRr D. ttrr **Answer: B**



238. A dihybrid plant on self pollination, produced 400 phenotypes with 4 types of genotype. How many seeds will have genotype TtRr?

- A. 50
- B. 150
- C. 200
- D. 100

Answer: D



Watch Video Solution

239. Which of the following points further strengthened Mendelism?

A. Law of independent assortment which was based on monohybrid

cross

B. Law of independent assortment which could be stated on the basis

of segregation of gametes

C. Incomplete dominance gave a new way to Mendelism

D. A character controlled by a pair of unit factors

Answer: B



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240. Mendel observed that some characters did not assort independantly.

Later researchers found it to be due to

A. crossing over

B. linkage in traits

C. both (a) and (b)

D. dominance of one trait over the other

Answer: B

241. The gene for right handedness is dominant over the gene for left handedness. Most probable gene types of two right handed parents with left handed child is

- A. RR \times rr
- $B.RR \times Rr$
- $C.Rr \times Rr$
- D. $Rr \times RR$

Answer: C



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242. Match the following and choose the correct combination from the options given:

D. Goldschmidt

Answer: D



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244. A dwarf pea plant was treated with gibberellic acid. It grows as a pure tall pea plant. If the treated plant is crossed with a pure tall plant, the phenotypic ratio of F_1 is likely to:

- A. all tall
- B. 75% tall and 25% dwarf
- C. all dwarf
- D. 50% tall and 50% dwarf

Answer: A



245. Genetically dwarf plant can be converted into a plant of normal height with help of:

A. auxins

B. ethylene

C. cytokinins

D. gibberellins

Answer: D



246. A genetically dwarf plant made tall by use of gibberellin was crossed with a plant purely tall. Then the progenies would be:

A. all dwarf

B. all tall

C. 50% tall and 50% dwarf

D. may be tall or dwarf

Answer: B



Watch Video Solution

247. A tall pea plant was grown in nutrient deficient soil and remained dwarf. When it is crossed with dwarf plant then:

- A. All hybrid plants are tall
- B. 50% tall and 50% dwarf
- C. 75% tall and 25% dwarf
- D. All hybrid plants are dwarf

Answer: A



248. Mendel did not propose: A. dominance B. segregation C. incomplete dominance D. independent assortment **Answer: C Watch Video Solution** 249. A plant having 24 cm long internodes is crossed with a plant having 12 cm long internodes. The hybrids have 18 cm long internodes due to A. multiple allelism B. complete dominance C. recessive dominance D. incomplete dominance

Answer: D



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250. F_1 hybrid is intermediate between the two parents. The phenomenon is:

- A. dominance
- B. co-dominance
- C. breeding inheritance
- D. incomplete dominance

Answer: D



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251. Incomplete dominance was discovered by:

A. Bateson
B. Mendel
C. Correns
D. Johannsen
Answer: C
Watch Video Solution
252. Incomplete dominance is shown by:
A. Primrose
B. Mirabills
C. Helianthus
D. China rose
Answer: B
Watch Video Solution

253. The complete dominance is absent for the flower colour in:
A. Mirabilis jalapa
B. Pisum sativum
C. Lathyrus odoratus
D. Oenothera lamarckiana
Answer: A
Watch Video Solution
254. Flower colour in Mirabilis jalapa is an example of:
A. Non-Mendelian inheritance

C. Chemical inheritance

D.	Both	(b)	and	©
D.	Both	(b)	and	©

Answer: A



Watch Video Solution

255. In Mirabillis jalapa, hybrid between red and white flowered plants produces pink flowers due to:

- A. linkage
- B. segregation
- C. heterosis
- D. incomplete dominance

Answer: D



256. In Mirabillis jalapa, TT, Tt, tt determine red, pink and white colour respectively. When ${\bf F}_1$ hybrid got from TT and tt was crossed with TT, ratio produced is:

- A. All red
- B. 2 red : 2 pink
- C. All white
- D. 2 pink : 2 white

Answer: B



- 257. Phenotypic and genotypic ratio is similar in case of
 - A. incomplete dominance
 - B. complete dominance
 - C. over dominance

D. epistasis	D.	epistasis
--------------	----	-----------

Answer: A



Watch Video Solution

258. During incomplete dominance, F_2 generation will have:

- A. 3:1 geotypic ratio
- B. 3:1 phenotypic ratio
- C. 1:2:1 phenotypic ratio
- D. 2:2:0 genotypic ratio

Answer: C



259. When red and white flowered Mirabillis plants are crossed all pink flowers are seen in \mathbf{F}_1 generation. When \mathbf{F}_1 progeny is selfed, the expected phenotypic and genotypic ratios are:

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

Answer: D



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260. F_2 generation in Mendelian cross showed that both genotypic and phenotypic ratios are same as 1: 2: 1. It represents a case of:

- A. co-dominance
- B. dihybrid cross

- C. monohybrid cross with complete dominance
- D. monohybrid cross with incomplete dominance

Answer: D



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261. 1:2:1 phenotypic and genotypic ratio is found in:

- A. pseudoalleles
- B. multiple alleles
- C. blending inheritance
- D. complementary genes

Answer: C



262. Incomplete dominance is found in

A. Pisum stivum

B. Antirrhinum majus

C. Both of these

D. None of these

Answer: B



Watch Video Solution

263. Snapdragon flowers can be red (RR) , pink (Rr) or white (rr). When red-flowered plants are crossed to white-flowered, the possibility of an $\rm F_2$ offspring being homozygous is:

A. 1/2

 $\mathsf{B.}\,1/4$

 $\mathsf{C.}\,3/4$

Answer: A



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264. RR (red) Antirrhinum majus is crossed with white (rr) one. Offsprings (Rr) are pink. This is an example of:

A. hybrid

B. supplementary genes

C. dominance-recessive

D. incomplete dominance

Answer: D



265. What would be the colour of flowers in ${\cal F}_1$ progeny as a result of cross between homozygous red and homozygous white -flowered Snapdragon

A. Pink

B. Red

C. White

D. Both (b) and (C)

Answer: A



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266. A blue Andalusian fowl is the product of mating black fowl with white fowl. A cross of blue fowl with another blue fowl results in:

A. 1 black: 2 white: 1 blue

B. 1 black: 2 blue: 1 white

- C. 2 black: 1 white: 1 blue

 D. none of the above
- **Answer: B**



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267. Due to incomplete dominance a cross between blue and white Andalusian fowl results in:

- A. 50% blue and 50% black
- B. 50% white and 50% black
- C. 50% blue and 50% white
- D. 75% black and 25% white

Answer: C



268. In Andalusian fowls, if a cross is made beween black fowl and splashed white, what will be the phenotypic ratio in ${\rm F}_2$?

A. 1:1

B.3:1

C.9:3:1

 ${\rm D.}\,1\!:\!2\!:\!1$

Answer: B



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269. In monohybrid cross, when both alleles express equally well, the ${\rm F}_2$ phenotypic ratio becomes:

A. 1:1

B.3:1

C.9:3:1

Answer: D



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270. In Mirabillis a hybrid for red (RR) and white (rr) flower produces pink (Rr) flower. A plant with pink flower is crossed with flower. The expected phenotypic ratio is:

A. red: pink (1:1)

B. red: white (3:1)

C. pink: white (1:1)

D. red: pink: white (1:2:1)

Answer: C



271. What does the following indicate?

Parent $R_1R_1 \times R_2R_2$ (white)

 $F_1 \quad R_1 R_2 (Pink)$

 F_2 1/4 Red : 1/4 White

A. Additive

B. Over dominance

C. Complete dominance

D. Incomplete dominance

Answer: D



Watch Video Solution

272. In the F_1 generation of any attempted cross when neither the gene for red nor white is dominant or recessive. In this case, both the genes express themselves partially the phenomenon is known as:

A. dominance

C. pseudo-dominance				
D. incomplete dominance				
Answer: D				
Watch Video Solution				
273. In Antirrhinium two plants with pink flowers were hybridized. The $F_{ m 1}$				
plants producedred, pink and white flowers in the proportion of 1 red, 2				
pink and1 white. What could be the genotype of the two plants used for				
hybridization. Red flower colour is determined by RR, and white rr genes				
A. rrrr				
B. RR				
C. rr				
D. Rr				

B. co-dominance

Answer: D



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274. The \mathbf{F}_2 generation offspring in plant showing incomplete dominance, exhibit:

- A. a genotypic ratio of 1:1
- B. a phenotypic ratio of 3:1
- C. variable genotype and phenotypic ratios
- D. similar phenotypic and genotypic ratios of 1:2:1

Answer: D



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275. In shortorn cattle genes for red (r_1) and white (r_2) coat colour occcur. Crosses between red (r_1r_2) and white (r_2r_2) produced (r_1r_2)

roan. This an example of A. epistasis B. co-dominance C. complementary genes D. incomplete dominance **Answer: B Watch Video Solution 276.** The genotypes $\operatorname{C^+}/\operatorname{C^h}$ (normal colour), $\operatorname{C^{ch}}/\operatorname{C^h}$ (chinchilla colour), C^{hc} (Himalayan colour), related to skin colour of rabbit represent: A. multiple alleles B. co-dominance C. polygenic inheritance D. complementary genes

Answer: A



Watch Video Solution

277. How many different genotypes can exist in a population with the dominance hierarchy ${
m C}^+>{
m C}^{ch}>{
m C}^h>c$?

- A. 6
- B. 10
- C. 8
- D. 16

Answer: B



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278. Multiple allelism is observed in:

A. Haemophilia in man B. Sex determination in birds C. ABO blood types D. Flower colour in Snapdragon **Answer: C** Watch Video Solution 279. Which of the following is the number of alleles for a blood group in an individual A. 1 B. 2 C. 4 D. 3 **Answer: D**

280. ABO blood group is determined by three different alleles. How many genotypes and phenotypes are possible?

۸	$\operatorname{Genotype}$	Phenotype
A. <i>(a)</i>	6	4
	Construe	Phenotype
B. (b)	3	1
C	Genotype	Phenotype
C. (c)	4	6
D	Genotype	Phenotype
D. (<i>d</i>)	9	7

Answer: A



281. A mother of blood group O has group O child. The group of father could be:

A. A or B

B. O only

C. AB only

D. A or B or O

Answer: D



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282. A child with blood group genotype $I_A I_B$ is born of a woman with genotype I_BI_B . The father could not be a man of genotype:

 $\mathsf{A.}\ I^AI^A$

 $B.I^AI^B$

C. I BIB

 $D.I^{A}i$

Answer: C



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283. A man with blood group B marries a woman with blood group A and their first child is having group B. What is the genotype of the child?

- A. I^AI^B
- $\text{B.}\ I^BI^B$
- $\text{C.}\ I^B \text{i}$
- $D. I^A i$

Answer: C



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284. In the ABO blood typing system, which of the following progeny are not possible?

- A. an O child from a mating of two A individuals
- B. an O child from a mating of an A and O individual

- C. an AB child from a mating of an A and O individual
- D. an A child from a mating of an AB individual to a B individual

Answer: C



285. Biometric gentics is connected with

- A. the inheritance of quantitative traits
- B. the genetical radiations on the living organisms
- C. the effect of environment on genetic set up organisms
- D. the biochemical explanations of various genetical phenomena

Answer: A



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286. Genes whose combined action affects one particular character are known as: A. polygenes B. oncogenes C. dominant genes D. pleiotropic genes Answer: A **Watch Video Solution** 287. Polygenic inheritance shows: A. different genotypes B. different phenotypes C. Both of these D. none of these

Answer: C



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288. Select the statement which is not correct?

- A. height, weight, skin colour are polygenic
- B. polygenic character is controlled by multiple genes
- C. polygenic character is controlled by multiple alleles
- D. in case of polygenic inheritance thousands of intermediate phenotypes are found between two extreme ones

Answer: B



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289. Which one of the following pairs of features is a good example of polygenic inheritance?

- A. Human height and skin colour
- B. Human eye colour and sickle-cell anaemia
- C. Hair pigment of mouse and tongue rolling in humans
- D. ABO blood group in humans and flower colour of Mirabilis jalapa

Answer: A



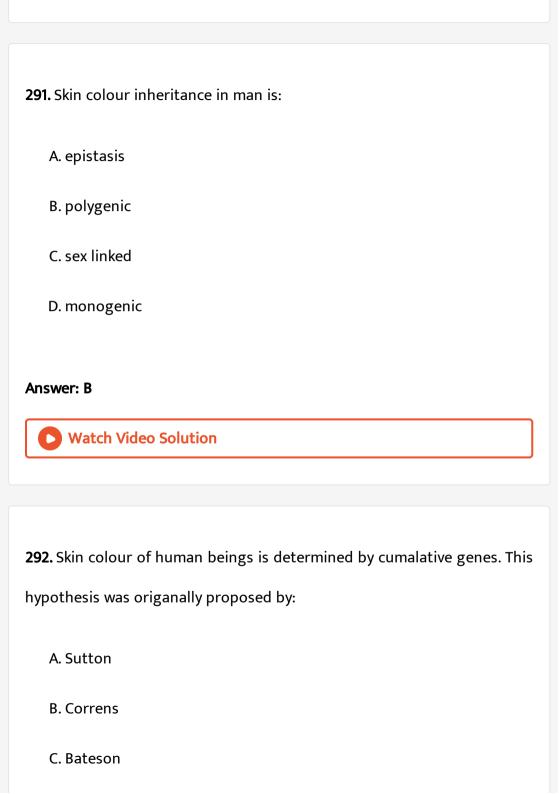
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- 290. In human beings, multiple genes are involved in the inheritance of:
 - A. skin colour
 - B. phenylketonuria
 - C. colour blindness
 - D. sickle-cell anaemia

Answer: A



Watch Video Solution



D. Davenport

Answer: D



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293. In a mating between two mulattos, each heterozygous at all three gene loci for the skin colour, what is the chance their child will have very light skin?

- A. 1/4
- $\mathsf{B.}\,5/8$
- $\mathsf{C.}\,9\,/\,16$
- D. 1/64

Answer: D



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294. Human skin colour is polygenic trait with each dominant determing a part of melanin deposition while the recessive are coding for no melanin.

If a very dark skinned person marries a very light skinned women, the chances of a very dark skinned offspring are

- A. 0
- $\mathsf{B.}\,1/4$
- $\mathsf{C.}\,5/8$
- D. 9/64

Answer: A



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295. Inheritance of skin colour in human being is an example of

- A. pleiotropy
- B. intragenic interaction

C. quantitative inheritance

D. interalletic interaction

Answer: C



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296. grain clour in wheat isdetermined by three pairs if polygenes.

Following the cross AABBCC (dark colour) $\,\times\,$ aabbcc (light colour), in F_2 generation what proportion of the progeny likely to resemble either parent

A. None

B. Half

C. One third

D. Less than 5 per cent

Answer: D



297. Kernel colour in wheat shows an F_2 ratio of 1:4:6:4:1. It is due to:

- A. two polygenes
- B. supplymentary genes
- C. different number of dominant genes
- D. different number of recessive genes

Answer: A



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298. The phenotypic ratio obtained in quantitive inheritance of a dihybrid cross is

or

In a cross between red kernelled and white kernelled varities of wheat

showing f polygenic inheritence the phenotypic inheritence the phenotypic ratio in F_2 generation will be

A. 1:2:1

B. 9: 3: 3:1

 $\mathsf{C}.\,1\!:\!4\!:\!6\!:\!4\!:\!1$

D. 1:6:15:20:15:6:1

Answer: C



Watch Video Solution

299. Which of the following is not a quantitative trait?

A. height in humans

B. ear length in corn

C. skin colour in humans

D. leaf size in tobacco

Answer: D



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300. Identify the correct match between inheritance and their examples:

Inheritance Example

- A Complete dominance 1 Flower colour in snapdragon
- B Multiple alleles 2 Coat colour of cattle
- C Co-dominance 3 Blood group inheritance
- D Incomplete dominance 4 Flower colour in pea

Answer: C



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301. In Lathyrus odoratus, cross between two purple flowered plants give a pink/white progeny. It is due

A. segregation

B. co-dominance

C. complementary genes

D. incomplete dominance

Answer: C



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302. Two dominant independently assorting genes react with each other.

They are

A. duplicate genes

B. supplementary genes

C. collaborative genes

D. complementary genes
nswer: D
Watch Video Solution
03. The ratio of $9:7$ is due to:
A. lethal genes
B. supplementary genes
C. epistatic genes
D. complementary genes
nswer: D

Watch Video Solution

304. Two or more independent genes present on different chromosomes which determine nearly same phenotype are called

- A. epistasis
- B. polygene
- C. complementary genes
- D. non-complementary genes

Answer: C



305. Genes A and B are necessary for normal hearing. What is the possible genotype of a normal child of deaf mother/ father?

- A. AaBb
- B. aaBB
- C. aabb

Answer: A



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306. Supplementary gene interaction in ${\bf F}_2$ results in a phenotypic ratio:

A. 9, 7

B. 12:3:1

C. 9:3:4

D. 12:1:3

Answer: C



Watch Video Solution

307. In a dihybrid cross F_2 ratio of 15 : 1 is due to:

A. duplicate genes B. recessive epistasis C. dominant epistasis D. supplementary genes Answer: A **Watch Video Solution** 308. Which one is an interaction of genes A. Pleiotropy B. Epistasis C. Dominance D. Recessiveness **Answer: B Watch Video Solution**

309. In epistasis:
A. one gene alters the effect of another
B. a portion of a chromosome is deleted
C. a portion of a chromosomes is inverted
D. nothing changes from generation to generation
Answer: A Watch Video Solution
310. The gene which suppresses and masks the expression of other is:
A. recessive
B. epistasis

C. co-dominant

D. complementary

Answer: B



Watch Video Solution

311. Epistasis effect in which the dihybrid cross AaBb \times AaBb resulting in the ratio 12 : 3 : 1 is due to:

- A. interaction between two alleles of different loci
- B. interaction between two alleles of the same locus
- C. dominance of one allele on another allele of both loci
- D. dominance of one allele on another allele of the same locus

Answer: A



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312. Gene which suppresses other gene's activity but do not lie on same locus is called as:

A. co-dominant

B. supplementary

C. epistatic

D. hypostatic

Answer: C



313. F_2 dihybrid ratio 12 : 3 : 1 is explained on the basis of:

A. epistatic interaction

B. complementary gene action

C. interaction between two alleles

D. both (a) and (b)

Answer: A



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314. The process that involves intergenic supperssion or the masking effect which on gene locus has upon the expression of another is called:

- A. epistasis
- B. recessive
- C. dominance
- D. pleiotropy

Answer: A



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315. One gene pair hides the effect of another. The pheomenon is:

A. mutation B. Epistasis C. dominance D. none of these **Answer: B** Watch Video Solution 316. In a genetic cross having recessive epistasis, F_2 phenotypic ratio would be: A. 12:3:1 B. 15:1 C. 9:6:1 D. 9:3:4 **Answer: D**



317. Epistasis results from:

A. only one gene

B. two different alleles present on same loci

C. two different genes present on different loci

D. two different chromosomes which are not homologous

Answer: C



318. Epistasis is the:

pair of genes

A. one pair of gene can completely mask the expression of another

B. one pair of genes independently controls a particular phenotype

C. one pair of gene enhances the phenotype expression of another pair of gene

D. many genes collectively control a particular phenotype

Answer: A



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319. The gene intraction when on egenes masks the effect or

When a gene pair hides the effect of another, the phenomenon is called

A. epistatic factor

B. duplicate factor

C. complementary factor

D. supplementary factor

Answer: A

320. Recessive epistasis is defined as:

masks the effect of one or both the member of another gene pair

B. a situation in which the dominant allele of the first gene pair masks

A. a situation in which a gene pair in homozygous recessive condition

dominant allele of the second gene pair masks the effect of both

the effect of both the members of the second gene pair and the

the members of the first gene pair

C. a situation in which one allele does not allow its alternative form to

express

D. a situation in which the dominant allele of one gene pair masks the effect of both members of another gene pair

Answer: A



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321. Sometimes a gene masks the expression of another, gene at a different locus. This phenomenon is known as:

- A. epistasis
- B. co-dominance
- C. incomplete dominance
- D. none of these

Answer: A



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322. Match the genetic phenomena with their respective ratios.

Column I Column II Inhibitory gene ratio 1 9:3:4 Complementary gene ratio В 2 1:1:1:1 \mathbf{C} Recessive epistasis ratio 3 12:3:1Dihybrid epistasis ratio 4 13:3 D \mathbf{E} Dominant epistasis ratio 5 9:7

A. A=5, B=4, C=3, D=2, E=1

B. A=1, B=2, C=4, D=3, E=5

C. A=4, B=5, C=1, D=2, E=3

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Answer: C

A. lethal

Answer: A

B. pleiotropic

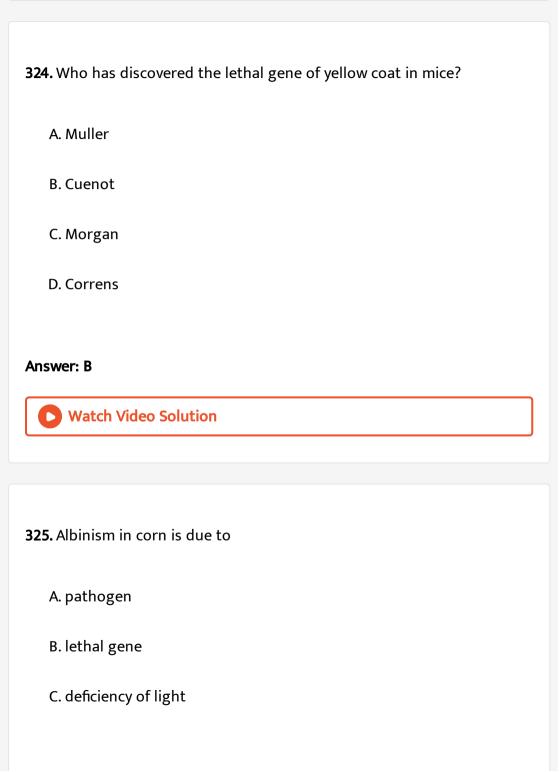
C. supplementary

D. complementary

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D. A=5, B=4, C=1, D=2, E=3

323. A gene whose phenotypic effect kills the bearer is called:



D. deficiency of minerals
Answer: B
Watch Video Solution
326. A dominant lethal gene:
A. determine the sex of the organism
B. kills the organism in which it is present
C. allows the organism to survive and to reproduce
D. allows the organism to survive but not to reproduce
Answer: B
Watch Video Solution
327. Recessive lethal genes are:

A. genes present on different chromosomes but influencing single trait B. causative for appearance of ancestral traits C. killers in homozygous state D. none of the above Answer: C **Watch Video Solution** 328. When a single gene influences more then one trait it is called A. penetrance B. polyploidy C. pleiotropy D. polydactyly Answer: C



329. Genes with multiple phenotypic effects are known as

A. hypostatic genes

B. duplicate genes

C. pleiotropic genes

D. complementary genes

Answer: C



330. Which of the following is associated with multiple phenotypes

A. mutation

B. Epistasis

C. Pleiotropy

Answer: C
Watch Video Solution
331. A pleiotropic gene is one which
A. affects one character
B. affects more than one character
C. supplements effect of another gene
D. requires another gene for its expression
Answer: B
Watch Video Solution
332. Which of the following is caused by pleiotropic gene?

D. Polygenic inheritance

- A. Thalessemia
- B. Haemophilia
- C. Sickle-cell anaemia
- D. Colour blindness

Answer: C



View Text Solution

333. In Drosophila gene for white eye mutation is also responfor depigmentation of body parts. Thus a gene that controls several phenotypes is called

- A. oncogene
- B. epistatic gene
- C. hypostatic gene
- D. pleiotropic gene

Answer: D **Watch Video Solution** 334. A single gene mutation affecting more than one phenotype is called A. Azotropic B. Auxotropic C. Pleiotropic D. myxotrophic **Answer: C Watch Video Solution** 335. Pleiotropic gene: A. inhibits crossing over

B. promotes crossing over C. controls only one phenotype D. controls several phenotypes **Answer: D Watch Video Solution**

336. Height is

- A. continuous variation
- B. blastogenic variation
- C. somatogenic variation
- D. discontinuous variation

Answer: A



A. make soil fertile
B. control pollution
C. become more progressive
D. produce improved varienties
Answer: D
Watch Video Solution
338. Which of the following is more likely to be heterozygous?
A. pure lines
B. autopolyploids
C. self-pollinated crops
D. cross-pollinated crops

337. The main aim of plant breeding is to:

Answer: D



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339. Which of the following variations are temporary and have nothing to do with the last or next generation

- A. Hereditary variations
- B. Discontinuous variations
- C. Environmental variations
- D. None of the above

Answer: C



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340. Discontinuous variations are

A. mutation B. essential features C. acquired characters D. noneessential features Answer: A **Watch Video Solution** 341. Primary source of allelic variation is A. mutation B. polyploidy C. recombination D. indepentdent assortment Answer: C **Watch Video Solution**

342. Variations occur mostly due to: A. linkage B. nutrition C. segregation D. crossing over **Answer: D Watch Video Solution** 343. A child has a single kidney since birth. This variation is A. substantive B. blastogenic C. positive meristic

D. negative meristic
Answer: D
Watch Video Solution
344. Pedigree chart is used to identify:
A. genetic drift
B. genetic diseases
C. genetic diversity
D. genetic mutation
Answer: B

345. In a certain plant, red fruit (R) is dominant over yellow fruit (r) and tallness (T) is dominant over dwarfness (t). If a plant with RRTt genotype is crossed with a plant that is rrtt, what will be the percentage of tall plants with red fruits in the progeny?

- A. 0.25
- B. 0.5
- C. 0.75
- D. 1

Answer: B



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346. When a cross is conducted between black feathered hen and a white feather cock, blue feathered fowls are formed. When these fowls are allowed for interbreeding, in \mathbf{F}_2 generation, there are 20 blue fowls. What would be the number of black and white fowls?

B. Blackk 10, white 20 C. Black 20, white 10 D. Black 20, white 20 Answer: A Watch Video Solution 347. Which of the following repesents a test cross? A. Ww \times WW $B.Ww \times Ww$ $C.Ww \times ww$ D. WW \times WW Answer: C

A. Black 10, white 10

348. In pigs, white coat (W) is dominant to black (w). Two white pigs are breed to produce 9 white and 2 black pigs. What are the genotype of the parents?

A. Ww \times Ww

 $B. ww \times ww$

C. WW \times WW

D. WW \times Ww

Answer: A



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349. The term heterosis was first coined by:

A. Poweri

B. McClintock

D. None of these
Answer: D
Watch Video Solution
350. The term heterosis was first used by:
A. Shull
B. R. Mishra
C. N.E. Borlaug
D. M.S. Swaminathan
Answer: A
Watch Video Solution

C. Swaminathan

351. In guinea pigs, black short hair (BBSS) is dominant over white long hair (bbss). During a dihybrid cross, the ${\rm F}_2$ generation individuals with genotypes, BBSS, BbSS, BBSs and BbSs are in the ratio of:

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

Answer: C



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RrYy genotypes in F_2 generation will be:

352. In a dihybrid cross between RRYY and rryy parents, the number of

- A. 2
 - B. 1

- C. 4
- D. 3

Answer: C



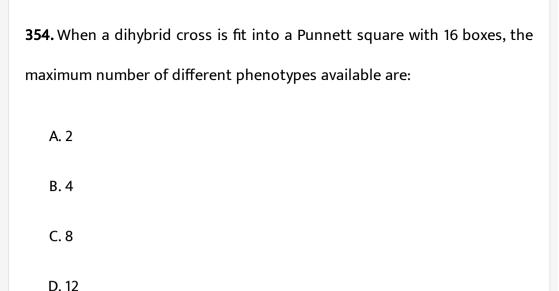
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353. A dihybrid test cross-yeilding a result of 1 : 1 : 1 : 1 ratio is indicative of:

- A. Homozygous condition of the $F_{\mathbf{1}}$ dihybrid
- B. 4 different types of F_1 generation dihybrid
- C. 4 different types of gametes produced by the P_1 parent
- D. 4 different types of gametes produced by the F_1 dihybrid

Answer: D





Answer: B



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355. A condition where a certain gene is present in only a single copy in a dipllid cell is called:

A. Hemizygous

B. Heterozygous

C. Monogamous

Answer: A
Watch Video Solution
356. How many types of gametes are obtained from a plant of genotype TTRr?
A. one
B. two
C. four
D. many
Answer: B

D. Homozygous

357. In a cross between a pure tall pea plant with green pod, and a pure short plant with yellow pod, how many short plants out of 16 you would expect in F_2 generation?

A. 3

B. 9

C. 4

D. 1

Answer: C



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358. In F_2 generation, quantitative inheritance 1 : 4 : 6 : 4 : 1 is obtained instead of:

A. 9:3:3:1

B. 8: 6: 4:1

C. 7: 4: 1: 4

D. 6: 6: 4: 7

Answer: A



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359. A character which is expressed in a hybrid is called:

A. recessive

B. epistatic

C. dominant

D. co-dominant

Answer: C



360. In seven pairs of contrasting characters in pea plant stydied by Mendel the number of flower based characters was:

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

Answer: A



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361. A true breeding plant producing red flowers is crossed with a pure plant producing white flowers.

Allele for red colour of flower is dominant. After selfing the plants of first filial generation, the proportion of plants producing white flowers in the progeny would be:

A. 1/3B.1/2C.3/4D. 1/4**Answer: D** Watch Video Solution 362. In Mendel's experiment how many different kinds of seeds are produced from a short plant with wrinkled seeds (ttrr)? A. 9 B. 4 C. 1 D. 2 **Answer: C**

363. When both alleles express their effect on being present together, the phenomenon is called

- A. dominance
- B. co-dominance
- C. pseudodominance
- D. amphidominance

Answer: B



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364. In which one of the following, complementary gene interaction ratio of 9 : 7 is observed?

A. Flower colour in pea

B. Four 'O' clock plant C. Coat colour in mouse D. Feather colour in fowl Answer: A **Watch Video Solution** 365. The dominant epistasis ratio is: A. 9:7 B. 9:3:4 C. 9:6:1 D. 12:3:1 Answer: D **Watch Video Solution**

366. Phenotypic ratio in plant Snapdragon in F_2 is: A. 1:1 B. 2:1 C. 3:1 D. 1:2:1 **Answer: D Watch Video Solution** 367. Mendel found that reciprocal crosses yielded indentical results. From that he concluded A. sex has no influence on the dominance of traits B. sex plays a role in deciding the dominance of trait C. there is independent assortment of traits0 D. there is no dominance of a trait

Answer: A



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368. graphical representation to calculate the probability of all possible genotypes of offsprings in a genetic cross

- A. karyotype
- B. genotype ratio
- C. Punnett square
- D. chromosome map

Answer: C



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369. Which one of the following cannot be explained on the basis of Mendel's Law of dominance

- A. Factors occur in pairs
- B. The discrete unit controlling a particullar character is called a factor
- C. Out of one pair of factors one is dominant and the other recessive
- D. Alleles do not show any blending and both the character recover as such in ${
 m F}_2$ generation

Answer: D



370. When two unrelated individuals or lines are crossed, the perfomance of \mathbf{F}_1 hybrid is often superior to both its parents. This phenomenon is called:

- A. splicing
- B. heterosis
- C. transformation
- D. metamorphosis

Answer: B



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371. The variation/difference in the offspring of a species from their parents constitutes an important component of:

- A. Genetics
- B. Heredity
- C. Speciation
- D. Species fixation

Answer: A



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372. If two pea plants having red (dominant) coloured flowers with unknown genotypes are crossed, 75% of the flowers are red and 25% are

white. The genotypic constitution of the parents having red coloured flowers will be: A. both hemizygous B. both homozygous C. both heterozygous D. one homozygous and other heterozygous **Answer: C Watch Video Solution** 373. In a polygenic cross Aa Bb Cc imes Aa Bb Cc, the phenotypic ratio of offspring is 1:6:'X':20:X:6:1. What is the value of 'X' A. 3

B. 9

C. 15

Answer: C



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374. Mendel's principle of segregation means that the germ cells always receive:

- A. One pair of alleles
- B. one quarter of the genes
- C. one of the paired alleles
- D. any pair of alleles

Answer: C



375. In Mendelian dihybrid cross when heterozygous Round Yellow are self crossed, Round Green offsprings are represented by the genotype:

- A. rrYy, rrYY
- B. RRyy, Rryy
- C. RrYy, rryy, Rryy
- D. Rryy, Rryy, rryy

Answer: B



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376. If a cross between two individuals produces offsprings with 50% dominant character (A) and 50% recessive character (a) the genotype of parents are:

- A. Aa \times aa
- B. Aa \times Aa

C. AA $ imes$ aa
D. AA × Aa
Answer: A
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377. How many types of genetically different gametes will be produced by
a heterozygous plant having the genotype AABbCc?
A. Two
B. Four
C. Six

D. Nine

Answer: B

378. Test cross in plants or in Drosophila involves crossing:

A. between two F_1 hybrids

B. between two genotypes with recessive trait

C. the F_1 hybrid with a double recessive genotype

D. between two genotypes with dominant phenotype

Answer: C



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379. Test cross of dihybrid ratio is 1:1:1:1. It proves that

A. Two different pogeny are produced by P_1 parents

 $\mathsf{B}.\, F_1$ hybrid produces four different progeny

 $C. F_1$ hybrid is homozygous

D. None of the above

Answer: B



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380. If F_1 generation has all tall plants and ratio of F_2 generation is 3 tall

- A. law of independent assortment
- B. incomplete doiminance
- C. law of segregation

: 1 dwarf, it proves

D. law of dominance

Answer: C



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381. Multiple phenotype is seen in

A. dominance relationship B. particular inheritance C. monogenic inheritance D. Polygenic inheritance Answer: D **Watch Video Solution** 382. Mendel was successful in discovering the principles of inheritance as A. He was a famous mathematician B. He took pea plants for his experiments C. He had an in-depth knowledge on hybridisation D. He did not encounter linkage between the ganes for the characters he considered

Answer: D



383. Mendelism principles are not applicable in case of:

A. Asexually reproducing forms

B. Diploid homozygous forms

C. Sexually inbreeding forms

D. Sex-linked alleles

Answer: A



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384. How many different types of gametes are formed from AaBbCcDdEe?

A. 2

B. 8

C. 16

Answer: D



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385. When yellow round heterozygous Pea Plants are self fertilized, the frequency of occurrence of RrYY genotype among the offspring is

- A. 2/16
- B.1/16
- $\mathsf{C.}\,9\,/\,16$
- D.3/16

Answer: A



386. A test cross is carried out:

A. predict whether two traits are linked

B. asses the number of alleles of a gene

C. determine the genotype of a plant at \boldsymbol{F}_{2}

D. determine whether two species or varities will breed successfully

Answer: C



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387. A man having the genotype EEFfGgHH can produce P number of genetically different sperms, and a woman of genotype liLLMnNn can generate Q number of genetically different eggs. Determine the values P and Q

A. P=4, Q=4

B. P=4, Q=8

C. P=8, Q=4

D. P=8, Q=8

Answer: B



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388. In an organism, tall phenotype is dominant over recessive dward phenotype, and the alleles are designated as T and t, respectively. Upon crossing two different individuals, total 250 offsprings were obtained, out of which 124 displayed tall phenotype and rest were dwarf. Thus, the genotype of the parents were

A. TT \times TT

 $B.TT \times tt$

C. $Tt \times Tt$

D. Tt \times tt

Answer: D

389. In a monohybrid cross between two heterozygous individuals, the number of pure homzygous individuals obtained in ${\rm F}_1$ generation is:

- A. 2
- B. 4
- C. 6
- D. 8

Answer: A



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390. Two or more independent genes present on different chromosomes which determine nearly same phenotype are called

A. supplementary genes

- B. complementary genes
- C. duplicate genes
- D. none of these



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391. If two persons with 'AB' blood group marry and have sufficeiently large number of children, these children could be classified as 'A' blood group: 'AB' blood group 'B' blood groyp in 1:2:1 ration. Modern technique of protein electrophoresis reveals presence o fboth 'A' and 'B' type proteins in 'AB' blood group individuals. This is an example of

- A. Codominance
- B. Partial dominance
- C. Complete dominance
- D. Incomplete dominance

Answer: A



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392. Which Mendelian idea is depricted by a cross in which the ${\rm F}_1$ generations resembles both the parents?

- A. codominance
- B. law of dominance
- C. incomplete dominance
- D. inheritance of one gene

Answer: A



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393. which of the following statements is correct?

- A. Each back cross is a test cross.
- B. Each test cross is a back cross.
- C. Crossing F_2 with F_1 is a test cross.
- D. Crossing F_2 with P_1 is called a test cross.

Answer: B



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- 394. In Mendel's seven characters of Pea, total number of colours tested by him was
 - A. 2

B. 3

- C. 4
- D. 5

Answer: C

395. Heterozygous tall plant (Tt) is crossed with homozygous dwarf (tt) plant. Then what will be the percentage of dwarf plants in the next generation?

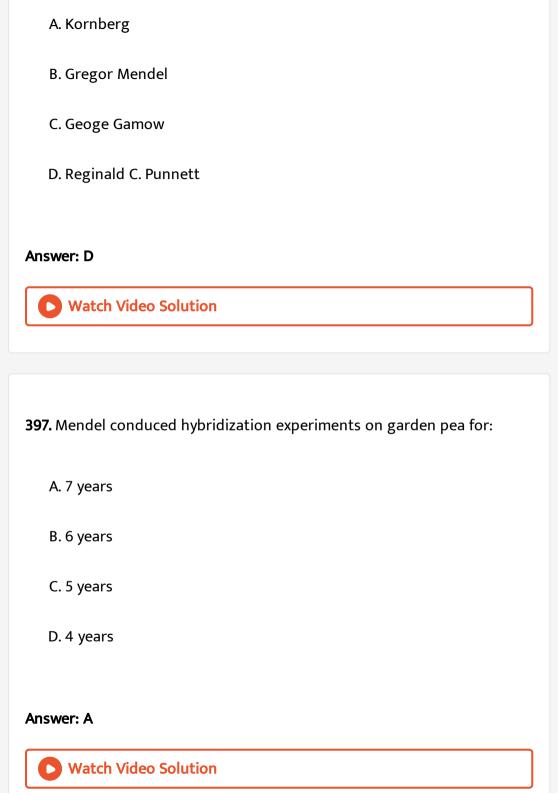
- A. 0.25
- B. 0.5
- C. 0.75
- D. 1

Answer: B



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396. The graphical representation to calculated the probability of all possible genotypes of offspring in a genetic cross was developed by:



398. Two plants one with black flower and other with white flower were crossed in an experiment. In the next generation grey coloured flowers were obtained. The reason for the result is:

- A. codominance
- B. pseudodominance
- C. incomplete dominance
- D. none of the above

Answer: C



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399. Statement A: For a particular character in an individual, each gamete gets only one allele.

Statement B: Chromatids of a chromosomes split (separate) and move towards opposite poles during anaphase of mitosis.

- A. Statement A is correct and statement B is wrong.
- B. Both the statements are correct and B is the reason for A.
- C. Statement B is correct and statement A is wrong.
- D. Both the statements are correct and B is not the reason for A.

Answer: D



- **400.** In Garden Pea, round shape is dominant over wrinkled shape. A pea plant heterozygous for round shape of seed is selfed and 1600 sedds produced during the cross are subsequently germinated. How many offspring will have parental phenotype
 - A. 400
 - B. 800
 - C. 1200
 - D. 1600



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401. Which of the following cross will give recessive progeny in F_1 generation

A. $tt \times tt$

 $B.TT \times TT$

 $C.TT \times tt$

D. Tt \times TT

Answer: A



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402. In a dihybrid cross between two heterozygotes, AaBb \times AaBb, if we get a 3:1 ratio among offspring, the reason would be

A. polygenes B. linked genes C. pleiotropic genes D. hypostatic genes **Answer: B Watch Video Solution 403.** Multiple alleles are present: A. On non-sister chromosomes B. On different chromosomes C. At the same locus on the chromosome D. At different loci on the same chromosome Answer: C **Watch Video Solution**

404. An example for codominance is:

- A. seed shape and colour is pea plants
- B. eye colour in Drosophila
- C. AB blood group in man
- D. haemophilia in man

Answer: C



- **405.** Phenotype of an organism is result of
 - A. environmental changes and sexual dimorphism
 - B. genotype and environment interactions
 - C. cytoplasmic effects and nutrition

D. mutations and linkages

Answer: B



- **406.** In Mendel's experiments with Garden Pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledons (YY) was dominant over green cotyledons(yy). What are expected phenotypes in F_2 generation RRYY \times rryy?
 - A. Only round seeds with green cotyledons
 - B. Only wrinkled seeds with green cotyledons
 - C. Only wrinkled seeds with yellow cotyledons
 - D. Round seeds with yellow cotyledons, round seeds with green cotyledons, wrinkled seeds with yellow cotyledons and wrinkled seed with green cotyledons

Answer: D



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407. In first step of monohybrid cross experiment, Mendel selected pea plant which were:

- A. pure tall as female and pure dwarf as male
- B. pure tall as male and pure dwarf as female
- C. heterozygous tall pas male and pure dwarf as female
- D. heterozygous tall as female and pure dwarf as male

Answer: A



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408. The phenotypic ratio obtained in quantitive inheritance of a dihybrid cross is

or

In a cross between red kernelled and white kernelled varities of wheat showing f polygenic inheritence the phenotypic inheritence the phenotypic ratio in F_2 generation will be

- A. 2:1
- B. 1:2:1
- C. 1:4:6:4:1
- D. 1:6:15:20:15:6:1

Answer: C



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409. What is not true about emasculation of a flower white performing an artificial cross?

A. It is done before anthesis.

B. It is to avoid self pollination.

C. It is removal of anthers from flower.
D. It is done in flowers of plants selected as male parent.
Answer: D
Watch Video Solution
410. Howmany types of gemete will be produced by an individual having
genotype AaBbcc:
A. one
B. Two
C. Four
D. Three
Answer: C
Watch Video Solution

- **411.** A gene showing codominance has:
 - A. alleles tightly linked on the same chromosome
 - B. alleles that are recessive to each other
 - C. one allele dominant on the other
 - D. both alleles independently

Answer: D



- **412.** A pleiotropic gene:
 - A. is a gene evolved during Pliocene
 - B. is expressed only in primitive plants
 - C. controls multiple traits in an individual
 - D. controls a trait only in combination with another gene



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413. In his classic experiment on Pea plants, Mendel did not use

A. pod length

B. seed colour

C. seed shape

D. flower position

Answer: A



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414. A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the ${\cal F}_1$ plant were selfed the resulting genotypeswere in the ratio of

- A. 3:1:: Tall: Dwarf
- B. 3:1:: Dwarf: Tall
- C. 1: 2:1:: Tall homozygous: Tall heterozygous: Dwarf
- D. 1: 2:1:: Tall heterozygous: Tall homozygous: Dwarf



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- 415. Match the terms in column I with their description in column II and
- choose the correct option: Column I

Dominance Many genes govern a single character (i)

Codominance (ii)In a heterogygous organism only one allel В

 \mathbf{C} Peiotropy (iii)In a heterozygous organism both alleles e (iv)A single gene influences many characters Polygenic inheritance

Column II

В \mathbf{C} D (a)(iv) (i) (ii) (iii)

 \mathbf{C} В D (iv) (iii)(i) (ii)

 \mathbf{C} D (ii) (i) (iv) (iii)

D (iv) (iii) (i)

Answer: D



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416. In a testcross involving F_1 dihybrid flies, more parental-type offspring were produced than the recombinant-type offspring. This indicates:

A. The two genes are linked and present on the same chromosome.

B. Both of the characters are controlled by more than one gene.

C. The two genes are located on two different chromosomes.

D. Chromosomes failed to separate during meiosis.

Answer: A



417. A true breeding plant is:

A. one that is able to breed on its own.

B. near homozygous and produces offspring of its own kind.

C. always homozygous recessive in its genetic constitution.

D. produced due to cross-pollination among unrelated plants.

Answer: B

