BIOLOGY

BOOKS - S DINESH & CO BIOLOGY (HINGLISH)

GENETIC BASIS OF INHERITANCE

Multiple Choice Question

1. The monohybrid genotypic ratio 1:2:1 in F_2 generation indicates

A. Segeration

B. Independent assortment

C. Dominance

D. Incomplete dominance

Answer: A

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2. The law of segeration of characters postulated by Mendel can be related to

A. The presence of two alleles for each character in a somatic cell

B. A gamate receiving only one of the two homologous chromosomes during meisois

C. Presence of both genes on the same chromosomes

D. None of the above

Answer: B

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3. The factors which represent the constrasting pairs of characters are called

A. Dominant and recessive

B. Alleles

C. Homologous pairs

D. Deteminants

Answer: B

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4. Mendel selected Pea as material for his experiments because

A. It is a annual plant with comparatively short life cycle

B. The flowers are self-pollinated

C. The number of seeds produced is quite large

D. All the above

Answer: D

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

A. The crossing of F_1 individual with homozygous recessive

B. Crossing and F_1 individual with either of the two parents

C. Crossing and F_1 individual with another F_1 individual

D. Crossing F_1 individual with that of F_2

Answer: A

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6. The first work on genetic was done by

A. Lamarck

B. Hugo de Vries

C. Mendel

D. Darwin

Answer: C

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7. According to the law of Independent Assotment in a dihybrid cross

A. There are four genotypes in F_2

B. F_2 contains 16 phenotypes

C. There is a single individual which is homozygous recessive for both the

characters

D. It is not possible to forecast the different phenotypes.

Answer: C

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8. The discipline which deals with the study of inheritance of characters is

A. Darwinism

B. Cytology

C. Genetics

D. Evolution

Answer: C

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9. The number of different types of gametes produced from a plant with genotype Aa Bb Cc is

A. 2

B. 8

C. 4

D. 16

Answer: B

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10. How many types of gametes are expected from the organism with genotype AABBCC :-

A. one

B. Two

C. Four

D. Eight

Answer: A

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11. A haploid set of all the genes present in a gamete is called

A. Genotype

B. Phenotype

C. Genome

D. Linkage group

Answer: C

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12. A plant with a genotype Aa Bb is crossed with a plant having the genotype aa bb. The genotype of F_1 would be

A. AaBb, AABB

B. aabb,aaBb

C. aaBB,AABb

D. AaBb,Aabb,aaBb, abab

Answer: D

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13. Gregor Johann Mendel was born in:

A. Australia

B. Heizendorf

C. Maravia

D. Brunn.

Answer: B

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14. How many types of gametes are expected from a plant with genotype Pp Qq, provided there occurs independent assortment ?

A. 4

B. 8

C. 2

D. 1

Answer: A

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15. How would you test a Pea plant whether it is a pure or hybrid for tallness?

A. Cross it with another tall Pea plant of unknown genotype

B. Cross it with a pure tall Pea plant

C. Cross with a homozygous dwarf Pea

D. Cross it with any Pea plant.

Answer: C

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16. The Mendelian principle which has always stood true is

A. The law of independent assortment

B. The law of segregation

C. The law of dominance

D. All the above

Answer: B

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17. Which of the following crossess would produce a genotypic ratio of 1:2:1

A. AB $\times$ AB

B. Ab $\times$ ab

C. Ab $\times$ Ab

D. ab $\times$ ab

Answer: C

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18. In Mirabilies jalapa when two F_1 pink flowered plants were corossed with each other, the F_2 generation produced 40 red, 80 pink and 40 white flowering plants. This is a case of

A. Duplicate genes

B. Lethal genes

C. Incomplete dominance

D. Epistasis

Answer: C

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19. Genotype-phenotype concept was first proposed by

A. Bateson

B. Johannsen

C. Sutton and Boveri

D. Punnet.

Answer: B

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20. At which stage of meiosis does the genetic constitution of gametes is finally decided?

A. Metaphase-I

B. Anaphase-I

C. Anaphase-II

D. Interkinesis

Answer: C

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21. The phenomenon which defies the independent assortment is

A. Segeration

B. Crossing over

C. Dominance

D. Linkage

Answer: D

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22. A tobacco plant heterozygous for albinism (a recessive character) is self-pollinated and 1200 seeds are subseqently germinated. How many seedlings would have the parental phenotype?

A. 900

B. 600

C. 1200

D. 300

Answer: B

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23. Mendel's law were rediscovered by

A. Lamarck, de Vries and Correns

B. Hugo De Vries, Correns and Tschermak

C. Morgan, Beadle and Tatum

D. Hugo de Vries, Morgan and Correns.

Answer: B

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24. When a yellow mouse were crossed to another yellow mouse, the F_1 generation produces yellow and brown-black mice in the ration 2:1. The yellow mice are never homozygous. The reason is

A. Homozygous yellow cannot survive due to lethal effect of genes

B. Yellow mice are not very suitable to live

C. There is no formation of zygotes with homozygous yellow constitution

D. None of the above

Answer: A

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25. A pea with white flowers was crossed to another pea which is also white flower plant. When selfed the F_2 generation produced purple and white in the ration 9:7. The reason for the results is that

A. It is typical monohybrid Mendalian ratio

B. Purple flower colour is dominant over the white

C. It is a complementary factor

D. None of the above

Answer: C

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26. Multiple alleles are present

A. At different loci in the same chromosome

B. In different chromosome

C. At the same locus in one type of chromosomes

D. None of the above

Answer: C

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27. An example of the quantitative trait in man is

A. Hair colour

B. Colour of eye

C. Skin colour

D. Shape of nose

Answer: C

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28. The law of segeration of characters is also called the law of purity of gametes because

A. Gametes have only one of the two alleles for each character

B. Gametes cannot be contaminated

C. Gametes are very different type of cells

D. It was just another name adopted accidently

Answer: A

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29. A dwarf pea plant was treated with GA. The plant became tall. The treated plant was then crossed with a homozygous tall pea. The resutl in F_2 are expected to be

A. All tall

B. Tall and dwarf in 3:1 ratio

C. 50% tall

D. All dwarf

Answer: B

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30. Mendel observed red flowers in F_1 when he crossed red and white flowered plants because of

A. Dominance

B. Recessive gene

C. Law of Independent Assortment

D. Law of Segregation.

Answer: A

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31. The genotypic ratio of a monohybrid cross will be

A. $3:1$

B. $1:1$

C. $1:2:1$

D. $2:1$

Answer: C

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32. Mendel formulated the laws of heredity considering seven pairs of constrasting characters in the pea plant. If he had studied an eight pair, the law which would have been altered is

A. Law of segeration

B. Law of dominance

C. Law of Independent Assortment

D. Law of unit characters

Answer: C

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33. Mendel was successful in formulating the laws of inheritance whereas his predecessors were not because

A. He studied one clear-cut character at a time

B. The character studied by him were present on separate chromosomes

C. Of the right choice of material

D. He kept accurate records of his experiments.

Answer: A

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34. Apperance of hidden character in some progeny of F_2 population indicates

A. Law of purity of gametes

B. Law of independent assortment

C. Law of dominance

D. None of the above

Answer: A

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35. Mendel's law of segeration is based upon the F_2 ratio of

A. $1:2$

B. $9:3:3:1$

C. $1:2:1$

D. $3:1$

Answer: D

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36. Mendel is popular for postulating

A. Origin of species

B. Cell theory

C. Linkage theory

D. Laws of inheritance.

Answer: D

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37. Like begets like' an important and universal phenomenon of life, is due to

A. Eugenics

B. Inheritances

C. Dominance

D. Crossing over

Answer: B

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38. Genes do not occur in pairs in

A. Zygote

B. Somatic cell

C. Endosperm cells

D. Gametes

Answer: D

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39. A modified dihybrid mendelian ratio of 9:3:4 indicates

A. Supplementary genes

B. Complementary genes

C. Lethal genes

D. Epistatic genes

Answer: A

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40. Segeration of genes take place during

A. Metaphase

B. Anaphase

C. Prophase

D. Embryo formation

Answer: B

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41. In an experiment on pea plant, pure plants with yellow round seeds (YYRR) were crossed with plants producing green wrinkled seeds (yyrr). What will be phenotypic ratio of F_1 progeny ?

A. 9 yellow round : 3 round green : 3 wrinkled yellow : 1 green wrinkled

B. All yellow round

C. 1 round yellow : 1 round green : 1 wrinkled yellow : 1 wrinkled green

D. All wrinkled green

Answer: B

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42. Genetics deal with

A. Heredity and variations

B. Heredity

C. Mutations

D. Nuclear and cytoplasmic inheritance.

Answer: A

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43. When a wheat variety of red karnels (homozygous for two nonallelic and independent dominant ganes) is crossed with white kernelled wheat (homozygous for two

recessive nonalleic independent genes), the phenotypic ratin in F_2 generation would be

A. $9:7$

B. $1:10:4:1$

C. $1:4:6:4:1$

D. $1:2:4:2:4:2:1$

Answer: C

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44. In multiple allele system a gamete possesses

A. Two alleles

B. Three alleles

C. One allele

D. Several alleles

Answer: C

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45. A pleiotropic gene in one which

A. Affects one character

B. Affects more than one character

C. Supplements the effect of another gene

D. Required another gene for expression.

Answer: B

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46. Sum total of all the genetic information in the breeding members of a population at a given time is known as

A. Gene pool

B. Genetic clone

C. Genome

D. Genetic Drift

Answer: A

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47. Hb^A and Hb^S alleles of normal and sickle called RBC are

A. Dominant-recessive alleles

B. Polygenic alleles

C. Codominant alleles

D. Multiple alleles.

Answer: C

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48. A genetic clone is

A. Plants produced by asexual means

B. Hybrid produced by sexual means

C. Homozygous plant prouduced by sexual means

D. Heterozygous plant proudced by sexual means

Answer: A

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49. A pure tall plant is reare in a soil poor in nutrition and reaches the size of dwarf plant. If this plant is selfed, the phenotype in the F_1 generation is most likely to be

A. All tall plant

B. 50% tall and 50% dwarf

C. All dwarf

D. Data insufficient

Answer: A

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50. A pleiotropic gene is

A. I^A

B. Hb^S

C. Hb^A

D. I^B

Answer: B

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51. Dominant gene for tallness is T and for yellow color is Y. A plant heterozygous for both the traits is selfed, then the ratio of pure homozygous dwarf and green offspring would be

A. $1/4$

B. $4/16$

C. $3/16$

D. $1/16$

Answer: D

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52. A gene that shows its effect on more than one character is

A. polygene

B. Pleiotropic gene

C. Multifactor gene

D. Multiple gene

Answer: B

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53. A dihybrid ratio of 1:4:6:4:1 is obtained instead of 9:3:3:1. This is an example of

A. Complementary genes

B. Supplementary genes

C. Polygenic inheritance

D. Pleiotropic genes.

Answer: C

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54. In a dihybrid cross, F_2 phenotypic ratio is 13:3. It is case of

A. Complementary genes

B. Epistatic genes

C. Multigentic inheritance

D. Incomplete dominance

Answer: B

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55. Epistatic gene differs from dominant gene in

A. Epistatic gene is nonallelic

B. Epistatic gene never expressed itself independently

C. Epistatic and hypostatic genes are present at different loci

D. All the above

Answer: D

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56. Mendel was

A. Plant breeder

B. Cytologist

C. Physiologist

D. Taxonomist.

Answer: A

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57. Mendel published his research under the title of

A. Law of heredity

B. Experiments in plant hybridisation

C. Hybridisation expriments on Pea

D. My experiments on particular inheritance

Answer: B

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58. The scientist who proposed particular concept of inheritance was

A. Darwin

B. Galton

C. Mendel

D. Garrod.

Answer: C

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59. Hugo de Vries, a rediscoverer of Mendel's work belonged to

A. Holland

B. Austria

C. Germany

D. England

Answer: A

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60. Tschmak-Seysnegg, a rediscoverer of Mendel's work, belonged to

A. USA

B. Spain

C. Austria

D. Australia

Answer: C

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61. Carl Correns, a rediscoverer of Mendel's work, was

A. American

B. German

C. Austrian

D. Spanish

Answer: B

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62. Siblings are

A. Sons and daughter of same parents

B. Individuals formed through asexual means

C. Individual from interspecific cross

D. Mutants.

Answer: A

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63. Offspring are individuals developed as a result of

A. Vegetative multiplication

B. Asexual reproduction

C. Sexual reproduction

D. All the above

Answer: C

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64. Checkerboard method of calculation was developed by

A. Mendel

B. Bateson

C. Punnett

D. Morgan

Answer: C

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65. An individual having similar unit factors of a character is

A. Heterozygote

B. Homozygote

C. Dominant

D. Recessive.

Answer: B

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66. Punnet square is used to know

A. Outcome of a cross

B. Probable result of a cross

C. Types of gametes.

D. Result of meiosis.

Answer: B

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67. Allele is

A. Segment of gene

B. Form of a gene

C. Special kind of gene

D. A muton.

Answer: B

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68. Repeated selfing produces

A. Heterozygosity

B. Homozygosity

C. Homozygosity in some and heterozygosity in other traits.

D. Pure hybrids.

Answer: B

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69. YyRR is crossed with yyRR. The progeny will be

A. 1YyRR:1yyRR

B. 3YyRR:1yyRR

C. 1YyRR:3yyRR

D. YyRR only.

Answer: A

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70. AaBb individual produces 2 million gametes. How many of them would carry both the recessive alleles (ab)

A. 1.5 million

B. 1.0 million

C. 0.5 million

D. 0.25 million

Answer: C

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71. A double homozygous yellow round seeded plant of Pea is crossed with green wrinkled seeded plant. The offspring shall be of

A. One type

B. Two types

C. Four types

D. Several types

Answer: A

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72. Percentage of pure breeding F_2 individual of a monohybrid cross would be

A. 0.75

B. 0.5

C. 0.25

D. 0.125

Answer: B

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73. Double homozygous individuals in F_2 generation of a dihybrid cross would be

A. $1/16$

B. $2/16$

C. $6/16$

D. $9/16$

Answer: B

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74. Ratio between completely homozygous dominant and homozygous recessive individuals of a dihybrid cross is

A. $1:1$

B. $2:2$

C. $6:10$

D. $10:6$

Answer: A

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75. Ratio of parental and recombinant phenotypes in a dihybrid cross would be

A. $8:8$

B. $6:10$

C. $10:6$

D. $9:7$

Answer: C

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76. Which mendelian priciple will not operate if two genes under study are close together

A. Paired unit factor

B. Dominance

C. Segeration

D. Independent assortment.

Answer: D

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77. In a monohybrid cross the ratio of F_2 true breeding dominant and true breeding recessive would be

A. $50:50$

B. $25:25$

C. $75:25$

D. $25:75$

Answer: B

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78. A single heterozygous yellow wrinkled seeded Pea plant shall produced gametes

A. YR only

B. yr only

C. Yr and yr

D. YR and yR

Answer: C

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79. A couple with curly haired husband and straight haired wife have all their children curly haired because

A. Both are heterozygous

B. Husband is homozygous and wife is heterozygous

C. Husband is heterozygous while wife homozygous

D. Both are homozygous.

Answer: D

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80. Gene P and Q are both required in dominant state for normal hearing. A deaf couple has all children with normal hearing. The probable genotype for the couple is

A. PPaa $\times$ ppQQ

B. PPqq $\times$ Ppaa

C. PpQq $\times$ ppqq

D. Ppaa $\times$ ppQq.

Answer: A

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81. Name the scientist who converted Mendel's conclusions into principles of heredity

A. De Vries

B. Tschermak-seysenegg

C. Carl Correns

D. T.H. Morgan.

Answer: C

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82. F_1 plants crossed with dominant individuals will yield a progeny of

A. All recessive

B. All dominants

C. Dominant and recessive in the ratio of 1:1

D. Dominant and recessive in the ratio of 3:1

Answer: B

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83. Round seed trait (R) is dominant over wrinkled (r) seed trait in Pea. Heterozygous round seede plant (Rr) is crossed with wrinkled seeded plant (rr). What is the possible progeny ?

A. 302round :102 wrinkled

B. 210 round: 95 wrinkled

C. 105 round : 99 wrinkled

D. 103 round :315 wrinkled

Answer: C

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84. A yellow round seeded Pea plant. Four phenotypes appeared in the progeny in the ratio of 1:1:1:1. The genotype of the two are

A. YyRr and yyrr

B. YYRR and yyrr

C. YYRr and yyrr

D. YyRR and yyrr.

Answer: A

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85. Position of a gene on chromosome is called

A. Locus

B. Factor

C. Cistron

D. Nucleosome

Answer: A

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86. Mendel was lucky and could discover a law of heredity because he selected traits which

A. Possessed linkage

B. Crossed independently

C. Had complete dominance

D. Had incomplete dominance

Answer: B

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87. Phenotype is influenced by

A. Environment

B. Development

C. Ageing

D. All the above

Answer: D

88. Same gene loci on two homologous chromosomes produce different phenotypes. They bear

A. Homozygous alleles

B. Heterozygous alleles

C. Two different genes

D. Pleiotropic genes.

Answer: D

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89. In a dihybrid cross, the proportion of individuals showing recessive phenotypes would be

A. $1/16$

B. $7/16$

C. $1/4$

D. $3/4$

Answer: D

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90. The number of genotypes produced by gametes Y and y would be

A. 1

B. 12

C. 3

D. 4

Answer: C

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91. A phenotypic ratio not obtained by Mendel was

A. $3:1$

B. $1:2:1$

C. $1:1:1:1$

D. $9:3:3:1$

Answer: B

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92. Hybrid Pea plant with yellow round seeds (YyRr) is self pollinated. Phenotypic ratio of next generation would be

A. $3:3:1:1$

B. $1:1:1:1$

C. $9:3:3:1$

D. $3:1:3:1$

Answer: D

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93. Truhybrid ratio is

A. $27:9:9:9:3:3:3:1$

B. $27:9:9:6:6:3:3:1$

C. $1:6:15:20:15:6:1$

D. $36:6:6:6:3:3:3:1$

Answer: A

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94. First generation after a cross is

A. First filial generation

B. F_1 generation

C. Second filial generation

D. Both A and B

Answer: D

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95. F_2 generation is produced as a result of

A. Crossing F_1 individual with dominant individual

B. Crossing F_1 individual with recessive individual

C. Crossing F_1 individuals amongst themselves.

D. All the above

Answer: C

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96. Which is incorrect in Mandelian characters ?

A.

Character	Dominant	Recessive
Pod colour	Green	Yellow

B.

Character	Dominant	Recessive
seed shape	Round	Wrinkled

C.

Character	Dominant	Recessive
Flower position	Terminal	Axillary

D.

Character	Dominant	Recessive
Shape of pod	Full	Constricted

Answer: C

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97. F_2 generation of a dihybrid cross possesses one or both the dominant traits in proportion of

A. $1/6$

B. $6/16$

C. $9/16$

D. $15/16$

Answer: D

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98. What is incorrect in the following Mendelian traits

A.

Character	Dominant	Recessive
Height	Tall	Dwarf

B.

Character	Dominant	Recessive
Seed colour	Green	Yellow

C.

Character	Dominant	Recessive
Flower position	Axillary	Terminal

D.

Character	Dominant	Recessive
Flower colour	Violet	White

Answer: B

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99. In Shepherd's Purse, the fruit shape is controlled by

A. Supplementary genes

B. Complementary genes

C. Duplicate genes

D. Polymeric genes

Answer: C

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100. A pure breeding triangular fruit bearing plant of Shepherd's Purse is crossed with

avoid fruit bearing plant. The ratio of two types of plants in F_2 generation would be

A. $3:1$

B. $1:2:1$

C. $13:3$

D. $15:1$

Answer: D

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101. 9:6:1 F_2 generation ratio is obtained in case of

A. Polymeric gene

B. Pleiotropic gene

C. Supplementry genes

D. Recessive epistasis

Answer: A

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102. Two plants of Summer Squash both having circular fruits are crossed. F_1 plants had discoid fruits. F_2 generation had 3 types of fruits, dicoid, circular and long in the ratio of

A. 9:3:4`

B. $9:6:1$

C. $12:3:1$

D. $7:6:3$

Answer: B

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103. Recessive epistasis is shown by

A. Flower colour in Sweet Pea

B. Fruit colour of Summer Squash

C. Coat colour of Mice

D. Shape of comb in poultry.

Answer: C

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104. The ratio of 2:1 is observed in case of

A. Suppressor gene

B. Dominant-recessive epistasis

C. Complementry gene

D. Lethal gene

Answer: D

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Revision Questions From Competitive Exams

1. Mendel conducted hybirdisation experiments on

A. Pigeon Pea

B. Garden Pea

C. Wild Pea

D. Sweet Pea.

Answer: B

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2. Tall red flowered Pea Plant crossed to dwarf white flowered plant yields only tall red flowered plant yields only tall red flowered plants. A test cross shall give a ratio of

A. $1:1$

B. $3:1$

C. $1:1:1:1$

D. $1:2:4:6:4:2:1$

Answer: C

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

A. Dominant-recessive

B. Incomplete dominance

C. Hybrid

D. Supplementary genes.

Answer: B

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4. A pure tall pea plant is crossed with pure dwarf Pea Plant. The progeny is self-pollinated. The ratio of true breeding tall Pea plants to true breeding dwarf Pea plants shall be

A. $2:1$

B. $1:1$

C. $3:1$

D. $1:2$

Answer: B

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5. F_2 generation of a cross between two white flowered strains of Sweet Pea yields 9 purple flowered plants: 7 white flowered plants. This is an example is

A. Epistasis

B. Complementary genes

C. Supplementary genes

D. Gene inhibition.

Answer: B

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6. Alleles of a gene are found on:

A. Same chromosomes

B. Homologous chromosomes

C. Nonhomologous chromososmes

D. Any chromosomes

Answer: B

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7. Which is a dominant trait ?

A. Colour blindness

B. Albinism

C. Haemophilia

D. Rh^+ factor.

Answer: D

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

A. 75% recessive

B. 50% recessive

C. 25% recessive

D. All dominant

Answer: B

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9. ABO blood group system is due to

A. Multifactor inheritance

B. Incomplete dominance

C. Multiple allelism

D. Epistasis

Answer: C

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10. Marriage between close relatives should be avoided because it induces more:

A. Recessive alleles to come together

B. Mutations

C. Multiple births

D. Blood group abnormalities

Answer: A

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11. The allele which is unable to express its effect in the presence of another is called

A. Codominant

B. Supplementary

C. Complementry

D. Recessive

Answer: D

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12. Lethal gene are

A. Causative for appearance of ancestral traits

B. Always recessive

C. Genes present on different chromosomes but influencing single trait

D. Killer in homozygous state.

Answer: D

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13. Blue eye colour is recessive to brown eye colour. A brown eyed man whose mother was blue eyed marries a blue eyed women. The children shall be

A. Both blue eyed and brown eyed 1:1

B. All brown eyed

C. All blue eyed

D. Blue eyed and brown eyed 3:1

Answer: A

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

A. $3:1$

B. $1:1:1:1$

C. $1:1$

D. $9:3:3:1$

Answer: B

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

A. Keeping breeding records

B. Employing many triats at one time

C. Differentiating inherite traits

D. Quantitative analysis of data.

Answer: D

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16. Mendel did not propose:

A. Dominance

B. Incomplete dominance

C. Segeration

D. Independent assortment.

Answer: B

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

A. Female AB and ab, male AA and bb

B. Female Aa and Bb, male AA and bb

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

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

Answer: C

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18. Genotype of F_1 individuals can be tested by

A. Backcross with homozygous recessive parent

B. Reciprocal crossing

C. Backcrossing with heterozygous parent

D. Backcrossing homozygous dominant parent

Answer: A

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19. A dihybrid condition is

A. ttRr

B. Ttrr

C. ttrr

D. Tt Rr

Answer: D

Watch Video Solution

20. Gametes of AaBb individuals can be:

A. Aa,Bb

B. AB,ab

C. AB,ab,aB

D. AB,Ab,aB,ab.

Answer: D

 Watch Video Solution

21. Pleiotropic gene has

A. Multiple genotype

B. Single genotype

C. Single phnotype

D. Multiple phnotype.

Answer: D

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22. An organism with two identical alleles is

A. Dominant

B. Hybrid

C. Heterozygous

D. Homozygous

Answer: D

 Watch Video Solution

23. Hybrid of pure red flowered and white flowered Pea is crossed to pure red flowered plant. The progeny shall be

A. White flowered

B. Red flowered

C. Both red and white flowered plants

D. Mostly red flowered plants.

Answer: B

Watch Video Solution

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

A. 303 rounded : 301 wrinkled

B. 301 rounded : 100 wrinkled

C. 20 round :99 wrinkled

D. 99 rounded : 301 wrinkled.

Answer: A

Watch Video Solution

25. Sexually reproducing organism contribute in their offspring

A. All of the gene

B. One half of their genes

C. One fourth of their genes

D. Double the number of genes.

Answer: B

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26. In a genetic cross having recessive epistasis, F_2 phenotypic ratio would be:

A. $9:6:1$

B. $15:1$

C. $9:3:4$

D. $12:3:1$

Answer: C

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27. Mendel's last law is

A. Segregation

B. Dominance

C. Independent assortment

D. Polygenic inheritance

Answer: C

 Watch Video Solution

28. First geneticist/father of genetics was

A. De Vries

B. Mendel

C. Darwin

D. Morgan

Answer: B

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29. The contrasting pairs of factors in Mendelian crosses are called

A. Multiple alleles

B. Allelomorphs/Alleles

C. Alloloci

D. Paramorphs

Answer: B

Watch Video Solution

30. In Mirabilis/Antirrhinum, hybrid between red and white flowered plants is pink flowered. This is

A. Heterosis

B. Segregation

C. Incomplete dominance

D. Dominance

Answer: C

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31. Segregation of Mendelian factors (no linkage, no crossing over) occurs during

A. Anaphase I

B. Anaphase II

C. Diplotene

D. Metaphase I

Answer: A

Watch Video Solution

32. Cross between hybrid and recessive parent is

A. Back cross

B. Test cross

C. Monohybrid cross

D. Dihybrid cross

Answer: B

Watch Video Solution

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

A. Mendelian inheritance

B. Monogenic inheritance

C. Complementary genes

D. Polygenic Quantitative inheritance

Answer: D

Watch Video Solution

34. Mendel did not notice/ An exception to Mendel's laws:

A. Dominance

B. Purity of gametes/segeration

C. Linkage

D. Independent assortment.

Answer: C

Watch Video Solution

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

A. $9:3:3:1$

B. $2:1:1:2$

C. $1:2:2:1$

D. $7:5:3:1$

Answer: C

Watch Video Solution

36. Mendel formulated the law of purity of gametes on the basis of:

A. Test cross

B. Back cross

C. Monohybrid cross

D. Dihybrid cross

Answer: C

Watch Video Solution

37. Cross between recessive parent and F_1 hybrid is called :

A. Back cross

B. Reciprocal cross

C. Monohybrid cross

D. Dihybrid cross

Answer: A

Watch Video Solution

38. Back cross is

A. $F_1 \times F_1$

B. $F_1 \times$ Recessive parent

C. $F_1 \times$ Dominant parent

D. $F_1 \times$ Any parent.

Answer: D

Watch Video Solution

39. Test cross is a cross between

A. Hybrid $\times$ Dominant parent (Tt $\times$ TT)

B. Hybrid $\times$ Recessive parent (Tt $\times$ tt)

C. Hybrid $\times$ Hybrid (Tt $\times$ Tt)

D. All the above

Answer: B

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40. Multiple alleles control inheritance of

A. Phenylketonuria

B. Colour blindness

C. Sickle cell anaemia

D. Blood groups

Answer: D

Watch Video Solution

41. One gene pair hides the effect of another.

The pheomenon is:

A. Epistasis

B. Dominance

C. Mutations

D. None of the above

Answer: A

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42. 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

D. Aabb

Answer: B

 Watch Video Solution

43. Nonallelic gene having similar phenotypic effect, interact to produce a different trait and a ratio of 9:7 in F_2 generation are

A. Epistatic gene

B. Hypostatic gene

C. Supplementary genes

D. Complementary genes

Answer: D

Watch Video Solution

44. An allele is dominant if it is expressed in:

A. Both homozygous and heterozygous states

B. Second generation

C. Heterozygous combination

D. Homozygous combination

Answer: A

Watch Video Solution

45. The child of 'O' group has 'B' group father .The genotype of the father will be :

A. $I^O I^O$

B. $I^B I^B$

C. $I^A I^B$

D. $I^B I^O$

Answer: D

Watch Video Solution

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

A. 100

B. 75

C. 50

D. 25

Answer: C

Watch Video Solution

47. Mendel's law of independent assortment can be demonstrated by

A. Test cross

B. Back cross

C. Monohybrid cross

D. Dihybrid cross

Answer: D

 Watch Video Solution

48. Law of dominance-recessiveness is proved by:

A. Back cross

B. Incomplete dominance

C. Monohybrid cross

D. Dihybrid cross

Answer: C

Watch Video Solution

49. In a test cross, the individual is crossed with

A. Homozygous dominant individual

B. Heterozygous individual

C. Homozygous recessive

D. None of the above

Answer: C

Watch Video Solution

50. In a cross 45 tall and 14 dwarf plants were obtained. Genotypes of parents are:

A. $\top \times \top$

B. $\top \times Tt$

C. $Tt \times Tt$

D. $\top \times$

Answer: C

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51. A yellow seeded true breeding Pea plant is crossed with green seeded true breeding plant. F_1 plants were yellow seeded showing that allele for yellow colour is

A. Heterozygous

B. Dominant

C. Lethal

D. Epistatic

Answer: B

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Watch Video Solution

52. RrYy yields gamete types

A. One

B. Two

C. Three

D. Four

Answer: D

Watch Video Solution

53. Heterozygous organism for two genes shall be

A. RRYY

B. RrYY

C. RrYy

D. RRYy

Answer: C

 Watch Video Solution

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

A. Gamete formation

B. Seed formation

C. Pollination

D. Embryonic development

Answer: A

Watch Video Solution

55. Medel studied inheritance of seven pairs of traits in pea which can have 21 possible combinations. If you are told that in one of these combinations. If you are told that in one of these combinations, independent assortment is not observed in later studies, your reaction will be

A. Independent assortment principle may be wrong

B. Mendel might not have studied all the combinations

C. It is impossible

D. Later sudies may be wrong.

Answer: B

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56. A polygenic inheritance in human beings is

A. Skin colour

B. Phenylketonuria

C. Colour blindness

D. Sickle cell anaemia

Answer: A

Watch Video Solution

57. A man of 'A' bood group marries a woman of 'AB' bood group .Which types of progeny would indicate that man is heterozyguos?

A. AB

B. A

C. O

D. B

Answer: D

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58. F_2 generation is produced as a result of

A. Crossing F_1 progeny with one of the parents

B. Selfing the progeny of two individual parents

C. Selfing the parents

D. Recessive cross between individual parents.

Answer: B

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59. The process of removing stamen from flora buds during hybridisation experiments is

A. Capping

B. Selfing

C. Emasculation

D. Crossing

Answer: C

Watch Video Solution

60. Hybrid are generally superior to parents due to

A. Heterosis

B. Homozygosity

C. Heterozygosity

D. Parents are generally weak.

Answer: A

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61. Ratio $9:3:3:1$ is due to:

A. Duplicate genes

B. Lethal genes

C. Monohybrid cross

D. Dihybrid cross

Answer: D

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62. The ratio of $9:7$ is due to:

A. Supplementary genes

B. Lethal genes

C. Complementary genes

D. Epistatic genes

Answer: C

Watch Video Solution

63. Monohybrid cross involves

A. Individuals of two different parents

B. Individuals different in one traits

C. Individuals different in two traits

D. Individual with parent.

Answer: B

 Watch Video Solution

64. A woman with albinic father marries an albinic man. The proportion of her progeny is

A. 2 normal : 1 albinic

B. All normal

C. All albinic

D. 1 normal :1 albinic

Answer: D

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65. In a dihybrid cross AABB $\times$ aabb, F_2 progeny of AABB, AABb, AaBB and AaBb occurs is the ratio of:

A. $1:1:1:1$

B. $9:3:3:1$

C. $1:2:2:1$

D. $1:2:2:4$

Answer: D

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66. The term eugenics was coined by :

A. Urey

B. Lederberg

C. Galton

D. Morgan

Answer: C

Watch Video Solution

67. Mendel chose contrasting traits in Pea

A. Three

B. Two

C. One

D. Seven

Answer: D

 Watch Video Solution

68. How many contrasting traits of Pea pod were chosen by Mendel?

A. 7

B. 2

C. 4

D. 3

Answer: B

 Watch Video Solution

69. Monohybrid ratio is

A. $3:1$

B. $9:7$

C. $1:2$

D. $9:3:3:1$

Answer: A

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70. Yellow colour is dominant over green colour. In a generation of 50% yellow and 50% green individuals, the parents are

A. Both homozygous

B. Both heterozygous

C. One of them is heterozygous

D. None of the above

Answer: C

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71. A cross between F_1 hybrid and a recessive parent (Tt $\times$ tt) gives a ratio of

A. $1:1$

B. $2:1$

C. $3:1$

D. $3:1$

Answer: A

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72. Different forms of a gene are called

A. Heterozygotes

B. Alleles

C. Complementary genes

D. Supplementary genes.

Answer: B

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73. O group mothe with O group child sues AB group man for fathership of child. What is true ?

A. The claim is correct

B. Father is true but mother is not

C. Both parents are false

D. Mother is true but father claimed is wrong.

Answer: D

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74. Mendel crossed a pure white -flowered recessive pea plant with a dominant pure red-flowered plant .the first generation og hybrid from the cross should show

A. 50% red flowered

B. 50% pink flowered

C. All red flowered

D. All pink flowered.

Answer: C

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75. Genetically identical progeny is produced when the individual

A. Performs self fertilization

B. Produces identical gametes

C. Practices inbreeding without meiosis

D. Practices reproduction

Answer: B

Watch Video Solution

76. Genes controlling seven traits in Pea studied by Mendel were actually located on

A. Seven chromosomes

B. Six chromosomes

C. Four chromosomes

D. Five chromosomes

Answer: C

Watch Video Solution

77. Cross AABb $\times$ aaBb yields AaBB:AaBb:Aabb:aabb offspring in the ratio of

A. $0:3:1:1$

B. $1:2:1:0$

C. $1:1:1:1$

D. $1:2:1:1$

Answer: B

Watch Video Solution

78. The process of mating between closely related individuals is

A. Self breeding

B. Inbreeding

C. Hybridisation

D. Heterosis

Answer: B

Watch Video Solution

79. A cross between pure tall Pea plant with green pods and dwarf Pea Plant with yellow pods will produce short F_2 plant out of 16

A. 9

B. 3

C. 4

D. 1

Answer: C

Watch Video Solution

80. How many types of gametes are required for F_2 generation of a monohybrid cross ?

A. 2

B. 4

C. 16

D. 8

Answer: B

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81. In case of incomplete dominance, F_2 generation has

A. Genotypic ratio equal to phenotypic ratio

B. Genotypic ratio is 3:1

C. Phenotypic ratio is 3:1

D. None of the above

Answer: A

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82. Mendel's principles are related to

A. Evolution

B. Reproduction

C. Variation

D. Heredity

Answer: D

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83. Which one is exception to Mendel's principle of dominance ?

A. Wild Pea

B. Mirabilis

C. Garden Pea

D. Maize

Answer: B

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84. Mendel's work was rediscovered by three scientists in the year

A. 1756

B. 1865

C. 1900

D. 1910

Answer: C

Watch Video Solution

85. Dihybrid cross is related to

A. Principle of dominance

B. Principle of independent assortment

C. Principle of segregation

D. Principle of purity of gametes.

Answer: B

 Watch Video Solution

86. Pheotypic dihybrid ratio is

A. $9:3:3:1$

B. $15:1$

C. $9:6:1$

D. $1:2:1$

Answer: A

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87. A child with mother of A group and father of AB group, will not have the following blood group

A. A

B. B

C. AB

D. O

Answer: D

Watch Video Solution

88. Mendel enunciated principles of inheritance

A. Two

B. Three

C. Four

D. Five

Answer: B

Watch Video Solution

89. In Red-White flowered cross of Mirabilis jalapa, F_2 generation has red, pink and white flowered plants in the ratio of

A. $1:2:1$

B. $1:0:1$

C. $2:1:1$

D. $1:1:2$

Answer: A

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90. Donors and recipients of blood transfusion can be

A. Only father and son

B. Only brother and sister

C. Only maternal uncle and niece

D. All the above

Answer: D

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91. Two genetic loci produce identical phenotypes in cis as well as trans position. They are

A. Pseudoalleles

B. Multiple alleles

C. Different genes

D. Part of same gene

Answer: A

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92. Phenomenon of an allele of one gene suppressing the activity of alleles of another gene is called

A. Dominance

B. Epistasis

C. Suppression

D. Inactivation

Answer: B

Watch Video Solution

93. Recombinations and variations in eucaryotic organisms are due ot

A. Mitosis and meiosis

B. Fertilization and mitosis

C. Meiosis and fertilisation

D. Meiosis and amitosis.

Answer: C

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94. Mendel's law of independent assortment is based on F_2 ratio of

A. $1:2:1$

B. $9:3:3:1$

C. $2:1$

D. $3:1$

Answer: B

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95. A brown eyed couple has a blue- eyed child . The trait of brown eye (B) is dominant over blue-eye (b). What is the genotype of the couple ?

A. Bb $\times$ Bb

B. $BB \times BB$

C. $BB \times Bb$

D. $BB \times$

Answer: A

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96. Pure red flowered and white flowered plants were crossed. It produced 120 offspring with

A. 90 white - flowered and 30 red-flowered

B. 90 red-flowered and 30 white-flowered

C. 60 red-flowered and 60 white-flowered

D. All red flowered.

Answer: D

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97. If red eyed (dominant) flu is mated with white eyed (recessive) fly, the ratio of red to white eyed in F_2 generation would be

A. $3:1$

B. $2:2$

C. $2:1$

D. $1:3$

Answer: A

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98. Blood grouping in human beings is controlled by

A. 4 alleles in which A is dominant

B. 3 alleles in which A and B are codominant and i is recessvie

C. 3 alleles in which one is dominant

D. 3 alleles in which A is dominat

Answer: B

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99. In humans, height shows a lot of variation.

It is an example of

A. Multiple alleles

B. Pleiotropic inheritance

C. Polygenic inheritance

D. Pseudoalleles

Answer: C

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100. Gene with multiple effects is

A. Codominant

B. Pleiotropic

C. Epistatic

D. Supplementary

Answer: B

Watch Video Solution

101. Red seed colour shows an F_2 ratio of 1:4:6:4:1. It is due to

A. Two polygene

B. Different number of dominant genes

C. Different number of recessive genes

D. Supplementary genes.

Answer: A

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102. Two dominant independently assorting genes react with each other. They are

A. Complementary

B. Supplementary

C. Duplicate

D. Collaborative.

Answer: A

Watch Video Solution

103. F_2 ratio in chicken came out to be 9 rose comb blacks, 1 single comb white, 3 rose comb whites and 3 single comb blacks. Which are the recessive ?

A. Single comb, white plumage

B. Rose comb, white plumage

C. Single comb, black plumage

D. Rose comb, black plumage.

Answer: A

Watch Video Solution

104. Polygenes show

A. Different phenotypes

B. Different genotype

C. Both of the above

D. None of the above

Answer: A

Watch Video Solution

105. A blue fowl obtained from mating between black and white fowls, is self-crossed. The F_2 ratio is

A. 1 black : 2 white : 1 blue

B. 2 black : 1 white : 1 blue

C. 1 black : 2 blue : 1 white

D. None of the above

Answer: C

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106. Epitasis in which dihybrid ratio of 9:3:3:1 between Aa Bb $\times$ AaBb is modified is

A. Dominance of one allele on another allele at the same locus

B. Dominance of one alleles on another allele at both its loci

C. Interaction of two alleles at different loci

D. Interaction between two alleles at same locus

Answer: B

Watch Video Solution

107. Genes located on same locus but having different expressions are

A. Multiple alleles

B. Oncogenes

C. Polygenes

D. Codominants

Answer: A

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108. A child of blood group O cannot have parents of blood groups

A. AB and AB/O

B. A and B

C. B and B

D. O and O

Answer: A

 Watch Video Solution

109. Which is true ?

A. Etiolation is genetic while albinism is physiological

B. Etiolation is not reversible

C. Etiolation is physiological but albinism is genetic

D. Etiolation and albinism are synonyms

Answer: C

 Watch Video Solution

110. Which amino acid is substituted in sickle cell anamia ?

A. Gutamic acid by valine in α-chain

B. Glutamic acid by valine in β-chain

C. Valine by glutamic acid in β-chain

D. Valine by glutamic acid in α-chain

Answer: B

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111. Allelomorphic pair implies

A. A pair of contrasting traits

B. A pair of noncontrasting traits

C. Any two traits

D. Sex-linked traits.

Answer: A

Watch Video Solution

112. In a case of red and white flowered Snapdragon, F_1 plants will have flowers

A. Red

B. White

C. Both A and B

D. Pink

Answer: D

Watch Video Solution

113. Cross between AaBB and aaBB will form

A. 1AaBB : 1aaBB

B. All AaBB

C. 3 AaBB : 1 aaBB

D. 1 AaBB : aaBB

Answer: A

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114. Four daughter cells obtained from a single meiosis differ from one another because of

A. Crossing over

B. Independent assortment

C. Change in chromosome number

D. Both A and B

Answer: D

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115. G.J. Mendel died in

A. 1984

B. 1894

C. 1884

D. 1926

Answer: C

Watch Video Solution

116. Hybrid Pea plant with yellow round seeds (YyRr) is self pollinated. Phenotypic ratio of next generation would be

A. $13:3$

B. $9:7$

C. $1:4:6:4:1$

D. $9:3:3:1$

Answer: D

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117. A cross between AaBb and aabb yields

A. AaBb and aabb

B. AaBb, Aabb, aaBb and aabb

C. AaBb

D. Aabb

Answer: B

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118. Heterosis is

A. Hybrid weakness

B. Hybrid weakness and vigour

C. Hybrid vigour

D. Neither weakness nor vigour of hybrid

Answer: C

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119. Branch of biology dealing with heredity and variation is

A. Ecology

B. Evolution

C. Palaeontology

D. Genetics

Answer: D

Watch Video Solution

120. Parents have blood group A and B. Blood group of the child can be

A. A or B

B. O

C. AB

D. All of the above

Answer: D

Watch Video Solution

121. Mendel found certain traits not to assort independently. It is due to

A. Dominace

B. Linkage

C. Crossing over

D. Amitosis

Answer: B

 Watch Video Solution

122. A genetic disorder in African which reduces oxygen uptake is

A. Haemophilia

B. Pernicious anaemia

C. Anaemia

D. Sickle cell anaemia

Answer: D

Watch Video Solution

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

A. Codominance

B. Incomplete dominance

C. Epistasis

D. Segregation

Answer: D

Watch Video Solution

124. For a given character, a gamete is always

A. Homozygous

B. Pure

C. Hybrid

D. Heterozygous

Answer: B

 Watch Video Solution

125. Gregor Johann Mendel, the father of gentics was

A. Austrian monk

B. British monk

C. Italian monk

D. German scientist.

Answer: A

Watch Video Solution

126. How many types of gametes will be produced by individuals of AABbcc genotype ?

A. Two

B. Four

C. Six

D. Nine

Answer: A

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

A. Discovered incomplete dominance

B. Not discovered the law of independents assortment

C. Discovered sex linkage

D. Mapped the chromosome.

Answer: B

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128. First child of a normal pigmented couple is albino. The possibility of a second child being an albino is

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer: A

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Watch Video Solution

129. Crossing over in diploid organism is responsible for

A. Dominance of genes

B. Linkage between genes

C. Recombination of linked genes

D. Segregation of alleles

Answer: C

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130. Mendel's law of heredity can be explained with the help of

A. Mitosis

B. Meiosis

C. Cloning

D. Both A and B

Answer: B

 Watch Video Solution

131. Number of phenotypes possible from AaBbCc $\times$ AaBbCc is

A. 16

B. 12

C. 8

D. 4

Answer: C

Watch Video Solution

132. Phenotypic ratio of a monohybrid F_2 progeny of incomplete dominance is

A. $1:1:1:1$

B. $2:1:1$

C. $1:2:1$

D. $3:1$

Answer: C

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133. Genotypic ratio of a dihybrid cross is

A. $12:3:1$

B. $15:1$

C. $1:2:1$

D. $1:2:2:4:1:2:1:2:1$

Answer: D

Watch Video Solution

134. Number of gamete types formed by AaBbCc individuals/heterozygous for three gene loci is

A. 2

B. 4

C. 8

D. 16

Answer: C

 Watch Video Solution

135. Which is connected with multiple phenotypes ?

A. Epistasis

B. Pleiotropy

C. Polygenic inheritance

D. Mutations

Answer: B

 Watch Video Solution

136. Mendel did not observe linkage due to

A. Mutation

B. Synapsis

C. Crossing over

D. Independent assortment.

Answer: D

Watch Video Solution

137. Mendel was born in

A. 17th century

B. 18th century

C. 19th century

D. 8th century

Answer: C

Watch Video Solution

138. Sickle cell anaemia is an example of

A. Epistasis

B. Codominance

C. Pleiotropy

D. Incomplete dominance

Answer: C

Watch Video Solution

139. Organism phenotypically similar but genetically different are

A. Heterozygous

B. Homozygous

C. Monozygous

D. Multizygous

Answer: A

Watch Video Solution

140. In albinism, the absence of which pigment makes the skin and hair light coloures

A. Melanin

B. Carotene

C. Haemoglobin

D. Chlorophyll

Answer: A

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141. Alleles are

A. Genes found on allosomes

B. Pair of genes governing a specific character like height

C. Genes governing eye characters

D. None of the above

Answer: B

Watch Video Solution

142. Incomplete dominance is found in

A. Neurospora crassa

B. Lathyrus odoratus

C. Pisum sativum

D. Antirrhinum/Mirabilis

Answer: D

Watch Video Solution

143. Hybrid vigour is due to

A. Mixing of traits of male and female

B. Homozygosity in gametes state

C. Superiority of genes

D. Heterozygosity

Answer: D

 Watch Video Solution

144. If both parents are albino, all the offspring shall be

A. Albino

B. Some albino, some normal

C. Homozygous normal

D. Heterozygous normal

Answer: A

Watch Video Solution

145. Albinism is due to nonsythesis of melanin on account of absence of

A. Melanase

B. Luciferase

C. Tyrosinase

D. Lysine

Answer: C

Watch Video Solution

146. Two individual with similar external appearance but different genetic make up have the similar

A. Genotype

B. Phenotype

C. Heterozygote

D. Homozygote

Answer: B

 Watch Video Solution

147. Out of two alleles of the same gene, one finds morphological expression. The phenomenon is

A. Epistasis

B. Codominance

C. Dominance

D. Incomplete dominance

Answer: C

Watch Video Solution

148. In Cucurbita, W is epistatic over Y and y gene normally responsible for yellow and green colour fruits. It produces white flowers.

What is the ratio of fruits in the progeny of cross $WwYy \times wwYy$?

A. 9 white : 7 yellow : 0 green

B. 3 white : 4 yellow : 1 green

C. 4 white : 3 yellow : 1 green

D. 2 white : 1 yellow : 1 green

Answer: C

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149. A recessive trait in Garden Pea is

A. Wrinkled seeds

B. Tall stem

C. Round seeds

D. Coloured seed coat

Answer: A

 Watch Video Solution

150. A cross involving two pairs of alleles is

A. Crossing over

B. Genetics

C. Dihybrid cross

D. Monohybrid cross.

Answer: C

 Watch Video Solution

151. Mendel is called of

A. Taxonomy

B. Genetics

C. Palaeobontany

D. Modern Physiology

Answer: B

 Watch Video Solution

152. Which is correct about traits chosen by Mendel ?

A. Terminal pod is dominant

B. Constricted pod is dominant

C. Green coloured pod is dominant

D. Tall plants are recessive

Answer: C

Watch Video Solution

153. Tallness (T-) is dominant over dwarfness (tt) while red flower colour (R-) is dominant over white colour (rr). A plant with genotype TtRr is crossed with plant of genotype ttrr. Percentage of progeny having tall plants with red flower is

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer: A

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154. Principle or laws of inheritance were enunciated by

A. Mendel

B. Morgan

C. Bateson

D. Punnet.

Answer: A

 Watch Video Solution

155. A cross between pure tall Pea plant with green pods and dwarf Pea Plant with yellow pods will produce short F_2 plant out of 16

A. 15

B. 13

C. 4

D. 7

Answer: C

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156. "Gametes are never hybrid ". It is a statement of law of

A. Dominance

B. Segregation

C. Independent assortment

D. Random fetilisation

Answer: B

 Watch Video Solution

157. Mendel could not find recombination and crossing over as

A. Traits he chose were either present on different chromosomes or were far apart

B. Traits chosen by him were not influenced by gene

C. He did not have a high power microscope

D. He selected only pure types.

Answer: A

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158. Most favourite and ideal material for researches in genetics is

A. Housefly

B. Mosquito

C. Frog

D. Fruitfly.

Answer: D

 Watch Video Solution

159. A cross involving parents differing only in one trait is

A. Haploid

B. Diploid

C. Monohybrid

D. Dihybrid

Answer: C

Watch Video Solution

160. In mendelian crosses the gene responsible for different characters separate through

A. Fusion

B. Aggregation

C. Segregation

D. Distribution

Answer: C

Watch Video Solution

161. Dihybrid test cross ratio is

A. $9:3:3:1$

B. $1:1:1:1$

C. $3:1$

D. $1:1$

Answer: B

Watch Video Solution

162. Which one is not a dominant trait amongst seven Pea traits chosen by Mendel ?

A. Flower Colour- Purple

B. Pod Colour-Yellow

C. Shape of Seed- Round

D. Flower-Axial

Answer: B

Watch Video Solution

163. Epistasis is due to

A. Interaction of two alleles of the same gene

B. Interaction of two separate genes

C. Polygenes

D. Multiple alleles.

Answer: B

164. 23 pairs of chromosomes can give rise to combinations

A. 8.6 million

B. 7.6 million

C. 6.6 million

D. 5.6 million

Answer: A

Watch Video Solution

165. Heterozygous tall plant is selfed. It produces both tall and dwarf plants. This confirms Mendel's law

A. Law of dominance

B. Law of segregation

C. Law of Independent Assortment

D. Incomplete dominance

Answer: B

Watch Video Solution

166. Which one is a dominant trait out of the characters chosen by Mendel ?

A. Pod Colour- Yellow

B. Seed Colour-White

C. Flower Position- Axillary

D. Plant Height- Dwarf

Answer: C

Watch Video Solution

167. R is dominant red flower trait while r is recessive white flower trait. Heterozygous Rr(red) is crossed with homozygous red

flowered plant. 64 offspring are produced. Number of white flowered plants is

A. 64

B. 32

C. 16

D. 0

Answer: D

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168. Ultimate source of variation is

A. Fertilization

B. Mitosis

C. Meiosis

D. Mutations

Answer: D

Watch Video Solution

169. Source of mendelian recombination is

A. Linkage

B. Independent assortment

C. Mutations

D. Dominat traits

Answer: B

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170. 1:2:1 phenotypic and genotypic ratios occur in case of

A. Blending/intermdiate inheritance

B. Pseudoalleles

C. Multiple alleles

D. Complementary genes

Answer: A

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171. Correct reason for Mendel's success was

A. He repeated each experiment several times

B. Traits chosen by him had genes far apart so that linkage was absent

C. He kept record of all experiments

D. He used statical techniques

Answer: B

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172. Sickle cell anaemia is

A. Sex linked inheritance

B. Autosomal heritable disease

C. Infection disease

D. Deficiency disease

Answer: B

 Watch Video Solution

173. By cross pollinating certain tobacco species, some fetile hybrids were obtained by

A. Mendel

B. Morgan

C. Kolreuter

D. Khorana.

Answer: C

 Watch Video Solution

174. Independent assortment is absent in case of

A. Genes located on the same chromosome

B. Genes located on homologous chromosomes

C. Genes located on nonhomologous chromosomes

D. All the above

Answer: A

 Watch Video Solution

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

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

A. Dominance

B. Codominance

C. Pseudodominace

D. Amphidominance

Answer: B

 Watch Video Solution

177. In complementary genes, the dihybrid ratio of 9:3:3:1 is modified to

A. $9:1$

B. $12:3:1$

C. $15:1$

D. $13:3$

Answer: A

Watch Video Solution

178. On crossing two similar hybrids, the percentage of recessive is

A. 0.5

B. 0.75

C. 0.25

D. 1

Answer: C

Watch Video Solution

179. Number of genotype found in F_2 progeny of a dihybrid cross is

A. 9

B. 6

C. 3

D. 1

Answer: A

 Watch Video Solution

180. Heterozygous tall (Tt) is crossed with homozygous tall (TT). Percentage of heterozygous tall in the progeny would be

A. 0.25

B. 0.5

C. 0.75

D. 1

Answer: B

Watch Video Solution

181. Pleiotropic effect is found in

A. Human skin colour

B. Night blindness

C. Haemophilia

D. Sickle cell anaemia

Answer: D

Watch Video Solution

182. Which of the following cross determines heterozygosity or homozogosity ?

A. Monohybrid cross

B. Dihybrid cross

C. Test cross

D. Back cross

Answer: C

Watch Video Solution

183. Tt $\times$ tt is

A. Test cross

B. Back cross

C. Hybridisation

D. Reciprocal cross

Answer: A

Watch Video Solution

184. In sickle cell anaemia, there is change in amino acid in β chain at position

A. VI

B. VII

C. IX

D. X

Answer: A

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185. Which is wrong about Mendel ?

A. He was born in 1822

B. Mendel presented his work in the form of a paper of Heinzendrof in 1856

C. Mendel carried out his experiment for 8 years

D. Mendel died in 1884

Answer: B

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186. Blood group of a couple are AB and O. The possible blood group of children would be

A. O group only

B. AB blood group

C. A or B

D. AB and O.

Answer: C

Watch Video Solution

187. Who amongst the following scientist rediscovered Mendel's work ?

A. T.H. Morgan

B. W. Baston

C. E. Strasburger

D. Von Tschermak.

Answer: D

Watch Video Solution

188. Dihybrid cross is made between RRYY (yellow round seed) and yyrr (wrinkled green seed) of Pea. F_2 ratio amongst round yellow,

round green, wrinkled yellow and wrinkled green would be

A. $9:3:3:1$

B. $15:1:0:0$

C. $9:3:4:0$

D. $4:4:4:4$

Answer: A

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189. Biometric gentics is connected with

A. Effect of radition on living organisms

B. Biochemical explanation of genetic phenomena

C. Effect of environment of genetic set up of organisms

D. Inheritance of quantitative traits.

Answer: D

 Watch Video Solution

190. In Mirabilis jalapa, RR, Rr and rr determine red , pink and white colours respectively. When F_1 hybrid of RR and r was crossed with dominant parent, the ratio produced in

A. All red

B. 2 red : 2 Pink

C. All white

D. 2Pink : 2 white.

Answer: B

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191. Sexual reproduction brings about

A. Polyploidy

B. Aneuploidy

C. Euploidy

D. Genetic recombination

Answer: D

Watch Video Solution

192. Alleles are

A. Alternate forms of a gene

B. Pair of sex chromosomes

C. Homologous chromosomes

D. None of the above

Answer: A

 Watch Video Solution

193. Law of Mendel which is not completely applicable

A. Law of dominance

B. Law of segregation

C. Law of Independent Assortment

D. Co-dominance

Answer: C

Watch Video Solution

194. Which one is correct ?

A. Polygenic character is controlled by multiple genes

B. Numerous intermediate types and found in between the two extremes in polygenic inheritance

C. Height, weight and skin colour are polygenic

D. Polygenic trait is controlled by multiple alleles.

Answer: D

Watch Video Solution

195. In quantitative inheritance F_2 ratio obtained

A. in a dihybrid cross is

B. $1:4:6:4:1$

C. $15:1$

D. $12:3:1$

Answer: A

Watch Video Solution

196. Given below are assertion and reason. Point out if both are true with reason being correct explanation (A), Both true but reason is not correct explanation (B), assertion true but reason wrong (C), both are wrong (D).

Assertion. The liked genes tend to get inherited together.

Reason. The bond between them fails to break.

A. (A)

B. (B)

C. (C)

D. (D)

Answer: A

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197. Pure line breed refers to

A. Homozygosity

B. Heterozygosity

C. Homozygosity and self assortment

D. Heterozygosity and linkage.

Answer: A

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198. A plant of genotype AABbCC is selfed. Phenotypic ratio of F_2 generation would be

A. $1:1$

B. $9:3:3:1$

C. $3:1$

D. $27:9:9:9:3:3:3:1$

Answer: C

Watch Video Solution

199. A gamete normally contains:

A. Many alleles of a gene

B. All alleles of a gene

C. Two alleles of a gene

D. One allele of a gene

Answer: D

Watch Video Solution

200. Children have A and B type of blood. What are the blood types of parents

A. A and O

B. AB and A

C. AB and O

D. A and B

Answer: C

Watch Video Solution

201. 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

Watch Video Solution

202. Complete dominance does not occur in

A. Mirabilis jalapa

B. Oenothera lamarckiana

C. Pisum sativum

D. Lathyrus odoratus.

Answer: A

Watch Video Solution

203. Emasculation is related to

A. Pure line

B. Mass selection

C. Clonal selection

D. Hybridisation

Answer: D

Watch Video Solution

204. Out of a population of 800 individuals in F_2 generation of a cross between yellow round and green wrinkled Pea Plants, what would be number of yellow and wrinkled seeds

A. 800

B. 400

C. 200

D. 150

Answer: D

Watch Video Solution

205. What is true of law of independent assortment ?

A. Applicable to all the dominant alleles

B. Applicable to all genes on the same chromosome

C. Not applicable to gene present on the same chromosome

D. Applicable to all recessive alleles

Answer: C

Watch Video Solution

206. Factors present on the surface of RBCs which are related to heredity are

A. Blood group

B. Haemoglobin

C. Antigens

D. Antibodies.

Answer: C

Watch Video Solution

207. Which one of the following traits of Garden Pea studied by Mendel was a recessive feature ?

A. Axial flower position

B. Green seed colour

C. Green pod colour

D. Round seed shape

Answer: B

 Watch Video Solution

208. Two crosses between the same pair of genotypes/phenotypes in which the source of gametes are reversed in one cross are called

A. Test cross

B. Reverse cross

C. Dihybrid cross

D. Reciprocal cross

Answer: D

Watch Video Solution

209. When a cluster of genes shows linkage behaviour they

A. Do not show chromosome map

B. Induce cell division

C. Do not show independent assortment

D. Show recombination during meiosis

Answer: C

Watch Video Solution

210. Children in a family have blood type O, A, AB and B respectively. What are the genotypes of their parents.

A. $I^A i$ and $I^B i$

B. $I^A I^B$ and ii

C. $I^B I^B$ and $I^A I^A$

D. $I^A I^A$ and $I^B i$

Answer: A

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211. Match the columns and choose the correct combination

a	Monohybrid cross	p	T and t
b	Test cross	q	TT
c	Alleles	r	$Tt \times Tt$
d	Homozygous tall	s	tt
		t	$Tt \times tt$

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

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212. TT Pea plant is crossed to tt plant. F_2 generation will have

A. All tall plants

B. Tall and dwarf in the ratio of 3:1

C. Tall and dwarf in the ratio of 1:2

D. Tall and dwarf in the ratio of 1:1

Answer: B

Watch Video Solution

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

A. RRYY $\times$ rryy

B. RRYy $\times$ rrYy

C. RrYY $\times$ Rryy

D. $RrYy$xx`rryy

Answer: D

Watch Video Solution

214. When both the parents are of blood group AB, children would be of blood group

A. A,B, AB and O

B. A,B and AB

C. A and B

D. A,AB and O

Answer: B

Watch Video Solution

215. Multiple alleles control inheritance of

A. Colour blindness

B. Sickle cell anaemia

C. Blood groups

D. Phenylketonuria

Answer: C

 Watch Video Solution

216. Phenotypic and genotypic ratio in F_2 generation in incomplete dominance is

A. 1:2:1 and 1:2:1

B. 3:1 and 1:2:1

C. 9:6 and 3:1

D. 9:3:3:1 and 1:2:1:4:1:1:2:1:2:1

Answer: A

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

A. De Vries

B. Tschermak

C. Correns

D. All the above

Answer: A

Watch Video Solution

218. Monohybrid cross produced both tall and dwarf Pea plants in the ratio of 3:1. Their genotypes would be

A. $\top \times Tt$

B. $Tt \times Tt$

C. $Tt \times$

D. $\top \times$

Answer: B

Watch Video Solution

219. What should be the composition of gametes ?

A. GgLl

B. Ggl

C. Gg

D. Gl

Answer: D

Watch Video Solution

220. Which one is an interaction of genes

A. Recessiveness

B. Dominance

C. Epistasis

D. Pleiotropy

Answer: C

Watch Video Solution

221. Alleles represent

A. Different forms of a gene

B. Same loci on homologous chromosomes

C. Two or more forms

D. All the above

Answer: D

 Watch Video Solution

222. A self-fertilizing trihybrid plant forms

A. Eight different gametes and 64 different zygotes

B. Four different gametes and sixteen different zygotes

C. Eight different gametes and sixteen different zygotes

D. Eight different gametes and thirty two different zygotes

Answer: A

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223. 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 is rrtt

A. All red fruit, tall 25%

B. All red fruit, tall 50%

C. All red fruit, tall 75%

D. All red fruit and tall

Answer: B

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224. A person with blood group A possesses

A. Antigen A and antibody B

B. Antigen B and antibody a

C. Antigen A and antibody b

D. No antigen and no antibody.

Answer: C

Watch Video Solution

225. How many type of gamets are found in F_1 progeny of cross between AABBCC and aabbcc?

A. 3

B. 8

C. 27

D. 64

Answer: B

Watch Video Solution

226. A cross between AA and aa will produce an F_1 progeny

A. Genotypically aa, phenotypically A

B. Genotypically AA, phenotypically a

C. Genotypically Aa, phenotypically A

D. Genotypically Aa, phenotypically a

Answer: C

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227. B-blood group man maries A blood group woman. The first child has B-blood group. Genotype of the child is

A. $I^A I^O$

B. $I^B I^O$

C. $I^A I^B$

D. $I^B I^B$

Answer: B

Watch Video Solution

228. Tall plant with round seeds (TTRR) is crossed with dwarf plant having wrinkled seeds (ttrr). F_1 plants are tall with rounded seeds. Types of gametes produced by them would be

A. one

B. Two

C. Three

D. Four

Answer: D

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229. Validity of Mendel's law of segregation is established when

A. Two hybrids are crossed

B. A parent is crossed with F_1 hybrid

C. Two pure breeding constrasting traits are crossed.

D. None of the above

Answer: A

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230. Height in humans is

A. Somatogenic variation

B. Discontinuous variation

C. Continuous variation

D. Both B and C

Answer: C

Watch Video Solution

231. Multiple alleles are characterised by

A. More than two alternate forms of a gene found at same locus

B. More than two alternate forms of a gene found at different loci

C. Occurrence of one gene in two chromosomes

D. None of the above

Answer: A

 Watch Video Solution

232. Mendel's law of segregation is applicable to

A. Dihybrid cross only

B. Both dihybrid and monohybrid crosses

C. Monohybrid cross only

D. Dihybrid but not monohybrid cross

Answer: B

Watch Video Solution

233. 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

234. Independent assortment can be deduced from

A. Monohybrid cross

B. Test cross

C. Back cross

D. Dihybrid cross

Answer: D

Watch Video Solution

235. Which trait was not incorporated by Mendel for his experiments?

A. Colour of Pea seed

B. Colour of Pea flower

C. Colour of Pea plant/Size of Pea seed

D. Coloured of pea pod

Answer: C

Watch Video Solution

236. Incomplete dominance was discovered by

A. Correns

B. Mendel

C. Johannsen

D. Bateson

Answer: A

Watch Video Solution

237. Total number of progeny of a dihybrid cross is 1280 in F_2 generation. How many are recombinants ?

A. 240

B. 360

C. 480

D. 720

Answer: C

Watch Video Solution

238. Which blood group can safely be transfused in emergency when there is no time to analyse the blood group of recipient ?

A. O and Rh^-

B. O and Rh^+

C. B and Rh^-

D. AB and Rh^+

Answer: A

Watch Video Solution

239. B blood group person can donate blood to and receive blood from

A. B, O nad B,O

B. B, AB and B,AB

C. B, AB and B,O

D. A,B and A,B

Answer: C

Watch Video Solution

240. Universal donor blood group is

A. AB

B. O

C. A

D. B

Answer: B

Watch Video Solution

241. In Drosophila gene for white eye colour is also responsible for depigmentation of body parts. It is an example of

A. Oncogene

B. Epistatice gene

C. Hypostatic gene

D. Pleiotropic gene

Answer: D

Watch Video Solution

242. 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: B

Watch Video Solution

243. Grain colour of wheat is determined by three pairs of polygenes. What proportion of F_2 progeny will resemble either parents following a cross of AABBCC (dark colour) with aabbcc (light colour).

A. None

B. Half

C. Less than 5%

D. One third

Answer: C

Watch Video Solution

244. In Pisum sativum there are 14 Chromosomes. How many paris with different chromosomal composition can be prepared

A. 2^{14}

B. 2^{7}

C. 7

D. 14

Answer: B

Watch Video Solution

245. 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. Dominance

B. Codominance

C. Incomplete dominance

D. Heredity

Answer: A

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246. A baby of blood group A cannot belong to parents of blood group

A. Husband O, wife AB

B. Husband A, wife B

C. Husband B, wife O

D. Husband AB, wife A

Answer: C

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

A. Segregation of characters

B. Independent assortment of genes

C. Crossing over of chromosomes

D. Homologous pairing between chromosomes.

Answer: B

Watch Video Solution

248. Find out the correct statement.

A. There are several pairs of constrasting characters of allotrophic traits

B. Hybrids remain infertile

C. Plants can be self fertilized

D. Small herbaceous plants can be easily cultivated.

Answer: A

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249. 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. 0.35

C. 0.5

D. 0.75

Answer: A

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250. Phenotype of an organism is result of

A. Mutations and linkage

B. Genotype and environment interactions

C. Cytoplasmic effects and nutrition

D. Environmental changes and sexual dimorphism.

Answer: B

Watch Video Solution

251. 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 wrinkled seeds with green cotyledons

B. Only wrinkled seeds with yellow cotyledons

C. Only round seeds with green cotyledons

D. Round seeds with yellow cotyledons and wrinkled seeds with green cotyledons .

Answer: D

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252. Test cross involves

A. Crossing between two genotypes with dominant trait

B. Crossing between two genotypes with recessive trait

C. Crossing the F_1 hybrid with double recessive genotype

D. Crossing between two F_1 hybrids.

Answer: C

Watch Video Solution

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

A. $TT \times tt$

B. $Tt \times Tt$

C. $Tt \times tt$

D. $TT \times TT$

Answer: C

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254. Which pair of features represents polygenic inheritance ?

A. Human eye colour and sickle cell anaemia

B. Hair pigment of mouse and tongue rolling in humans

C. ABO blood groups in humans and flower colour of Mirabilis jalapa

D. Human height and skin colour.

Answer: B

Watch Video Solution

255. Mating of an organism to double recessive in order to determine whether it is homozygous or heterozygous for a character is called

A. Reciprocal cross

B. Back cross

C. Diybrid cross

D. Test cross

Answer: B

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256. 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. O

B. $1/4$

C. $5/8$

D. $9/64$

Answer: A

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257. A test cross is performed

A. By selfing of F_2 generation plants

B. By selfing of F_1 generation plants

C. To determine whether F_1 plants are homozygous or heterozygous

D. Between homozygous dominant and homozygous recessive plants.

Answer: C

Watch Video Solution

258. Possible blood groups of children born to parents having A and AB groups are

A. O,A

B. A,B , AB

C. O,A,B

D. O,A,B,AB

Answer: B

Watch Video Solution

259. When pure long plant having white flower is crossed with pure dwarf plant having red flower, the dwarf progeny in F_2 generation is

A. $1/16$

B. $3/16$

C. $4/16$

D. $9/16$

Answer: C

Watch Video Solution

260. Which of the following is correct for dihybrid cross ?

A. 1 YYRR, 2 YyRR, 2yyRr, 4YyRr

B. 1YYRR, 3YyRR, 2yyRr, 3YyRr

C. 3YYRR, 3YyRR,2yyRr, 4YyRr

D. 1YYRR,1YyRR,2yyRr,3YyRr

Answer: A

 Watch Video Solution

261. Word genetics comes from

A. Gene

B. Genesis

C. Genome

D. Genomics

Answer: B

 Watch Video Solution

262. Selfing of hybrid yellow round seeded (YyRr) Pea plants, the phnotypes of next generation would be

A. $15:1$

B. $9:7$

C. $12:3:1$

D. $9:3:3:1$

Answer: D

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263. 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: D

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264. Match the genetics phenomena with their respective ratios

	Column – I		Column – II
A.	Inhibitory gene ratio	1.	9 : 3 : 4
B.	Complementary gene ratio	2.	1 : 1 : 1 : 1
C.	Recessive epistasis ratio	3.	12 : 3 : 1
D.	Dihybrid test cross ratio	4.	13 : 3
E.	Dominant epistasis ratio	5.	9 : 7

A. a-5,b-4,c-3,d-2,e-1

B. a-4,b-5, c-1,d-2,e-3

C. a-1,b-2,c-4,d-3,e-5

D. a-2,b-2,c-4,d-5,e-3

Answer: B

Watch Video Solution

265. In a monohybrid cross, the genotypic ratio of F_2 is:

A. $3:1$

B. $1:2:1$

C. $1:1$

D. $9:3:3:1$

Answer: B

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266. In humans blue eye colour is recessive to brown eye colour. If a boy has brown eyes and mother blue-eyed, what would be phenotype of father ?

A. Green eye

B. Blue eye

C. Black eye

D. Brown eye

Answer: D

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267. 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. zero

B. $1/2$

C. $1/4$

D. $1/16$

Answer: D

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268. The number of phenotypes in ABO blood groups is

A. 1

B. 4

C. 6

D. 8

Answer: B

 Watch Video Solution

269. Mendel's experimental material was

A. Drosophila melanogaster

B. Homo sapiens

C. Pisum sativum

D. Antirrhinum majus

Answer: C

Watch Video Solution

270. An individual having different alleles of a gene is

A. Heterozygous

B. Homozygous

C. Diploid

D. Mosaic

Answer: A

 Watch Video Solution

271. The offspring of AA bb $\times$ aa BB is crossed with , aabb. The genotypic ratio of progeny will be

A. $9:3:3:1$

B. $1:2:1$

C. $1:1:1:1$

D. $4:1$

Answer: C

Watch Video Solution

272. Mating between two individuals differing in genoutope to produce genetic variation is called

A. Hybrid

B. Progeny

C. cybrid

D. Heterosis

Answer: A

Watch Video Solution

273. The term 'genetics' was proposed by:

A. Johannsen

B. Morgan

C. Mendel

D. Bateson.

Answer: D

Watch Video Solution

274. When heterozygous red flowered plant is crossed with white flowered plant the progeny will show a ratio of

A. 350 red : 350 white

B. 450 red : 250 white

C. 380 red: 220 white

D. None of the above

Answer: A

Watch Video Solution

275. Genotype of hybrid is known by crossing

A. F_2 progeny with female parent

B. $F_1 \times F_1$

C. Crossing F_1 with recessive parent

D. F_2 with recessive parent.

Answer: C

Watch Video Solution

276. In pea, yellow seed colour is dominant over green colour. Heterozygous Yellow seeded plant is crossed with green seeded

plant. The ratio of yellow to green seeded offspring will be

A. $9:1$

B. $1:3$

C. $3:1$

D. $50:50$

Answer: D

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277. A human male produces diallelic sperms in equal proportion AB, Ab, aB and ab. The genotype of the person would be

A. Aa Bb

B. Aa BB

C. AABb

D. AA BB

Answer: A

Watch Video Solution

278. Incomplete dominace ratio of red, pink and white in Four 'O clock is

A. $1:2:1$

B. $1:1:2$

C. $1:2:2$

D. $2:2:1$

Answer: A

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279. Theory of pangenesis was given by

A. Weismann

B. De Vries

C. Darwin

D. Lamarck.

Answer: C

Watch Video Solution

280. A plant of genotype RRTt (red fruits, tall) is crossed with a plant of genotype rrtt (white furits, dwarf). What is percentage of tall plants with red fruits in next generation ?

A. 1

B. 0.75

C. 0.25

D. 0.5

Answer: D

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281. Inheritance of blood group is a condition of

(a) Codominance

(b) Incomplete dominance

(c) Multiple allelism

(d) Dominance

A. a,b

B. b,d

C. a,c and d

D. b,c

Answer: C

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282. In a hybrid cross, the maximum number of phenotypes would be

A. 8

B. 4

C. 2

D. 16

Answer: B

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283. Blood group A person can

A. Be parent of a child with B blood group

B. Possess only B-antigen

C. Safely receive blood from a donor of B-group

D. Possess both antigens A and B

Answer: A

284. How many types of gametes will be produced by an organism with AaBBCc/AABbCc genotype

A. 3

B. 4

C. 9

D. 6

Answer: B

Watch Video Solution

285. 3 In guinea pig, black short hair (BBSS) is dominant over white long hair (bbss). In the dihybrid cross, F_2 genotype BBSS, BbSS,BBSs and BbSs appears in the ratio of

A. $9:3:3:1$

B. $4:2:1:2$

C. $1:2:1:4$

D. $1:2:2:4$

Answer: D

Watch Video Solution

286. In heterozygous condition, both the alleles express in

A. Colour blindness

B. AB blood group

C. Rh factor

D. A and B blood types

Answer: B

Watch Video Solution

287. Lack of independent assortment between two genes A and B in fruitly Drosophila is due to

A. Crossing over

B. Repulsion

C. Recombination

D. Linkage.

Answer: D

Watch Video Solution

288. In F_2 generation quantitative inheritance of 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

Watch Video Solution

289. Variations appear during meiosis due to

1 . Independent assortment

2. Crossing over

3. Linkage

4. Glycolysis

Select the correct code

A. 1,2,3 correct

B. 1,2 correct

C. 2,4 correct

D. 1,3 correct

Answer: B

 Watch Video Solution

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

A. Heredity variation

B. Environmental variations

C. Discontinuous variations

D. Continuous variations

Answer: B

Watch Video Solution

291. Inheritance of ABO blood groups is an example of

A. Incomplete dominance

B. Dominance

C. Codominance

D. Both B and C

Answer: D

 Watch Video Solution

292. In a diybrid cross between RRYY and rryy, the number of RrYy F_2 genotypes will be

A. 4

B. 3

C. 2

D. 9

Answer: A

Watch Video Solution

293. Both husband and wife have normal vision thought their father were colour blind and mothers without any allele for colour blindness. The probability of their daughters becoming colour blind is

A. 0

B. 0.15

C. 0.25

D. 0.5

Answer: A

Watch Video Solution

294. Offspring produced from a marriage have only O and A blood groups. The possible genotypes of the parents would be

A. $I^A I^A$ and $I^A I^O$

B. $I^A I^A$ and $I^O I^O$

C. $I^O I^O$ and $I^O I^O$

D. $I^A I^O$ and $I^O I^O$

Answer: D

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295. White eye is a sex linked recessive trait in Drosophila. In cross of white eyed female with normal male, what are the phenotype of F_1 generation

A. All normal

B. All males white eyed, all females normal

C. 50% females and all males white eyed

D. 50% males and 50% females white eyed.

Answer: B

 Watch Video Solution

296. A dwarf Pea plant with wrinkled seeds (ttrr) produces seeds of type

A. 2

B. 4

C. 1

D. 9

Answer: C

Watch Video Solution

297. Out of seven characters in Pea plant studied by Mendel, the number of flower based character was 1

A. 1

B. 3

C. 4

D. 2

Answer: D

Watch Video Solution

298. In a case of incomplete dominance, true breeding red flowerd plant (RR) is crossed with true breeding white flowered plant (rr). What would be correct F_2 ratio ?

A. 1 red : 2 pink : 1 white

B. 3 red : 1 white

C. 1 red : 1 pink : 2 white

D. 2 red : 1 pink : 1 white

Answer: A

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

A. Four O'clock plant

B. Feather colour in Fowl

C. Flower colour in Sweat Pea

D. Coat colour in Mouse

Answer: C

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300. Dominant epistasis ratio is

A. $9:7$

B. $9:3:3:1$

C. $9:3:4$

D. $12:3:1$

Answer: D

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301. ABO blood grouping in humans in an example of

A. Polygenic inheritance

B. Multiple allelism

C. Epistasis

D. Pleiotropism

Answer: B

 Watch Video Solution

302. A cross between F_1 hybrid and recessive parent gives a ratio of

A. $3:1$

B. $1:1$

C. $2:1$

D. $4:1$

Answer: B

 Watch Video Solution

303. Genes showing multiple effects are

A. Complementary gene

B. Pseudogenes

C. Pleiotropic genes

D. Cistrons

Answer: C

Watch Video Solution

304. Change in the number of body parts is called

A. Meristic variation

B. Substantive variation

C. Continuous variation

D. Discontinuous variation

Answer: A

Watch Video Solution

305. In Garden Pea, yellow colour of cotyledons is dominant over green and round shape of seed is dominant over wrinkled. When a plant with yellow and round seeds is crossed with a plant having yellow and wrinkled seeds, the progeny showed segregation for all the four characters. The probability of obatining green round seeds in the progeny of this case is

A. $1/8$

B. $1/16$

C. $1/4$

D. $3/16$

Answer: D

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306. Genome represents total number of gene in

A. A chromosome

B. Homologous chromosomes pair

C. Haploid set of chromosomes

D. Diploid set of chromosomes

Answer: C

Watch Video Solution

307. Human blood grouping is ABO instead of ABC because O in it refers to

A. No antigen A or B on RBCs

B. Other antigens besides A and B

C. Overdominance of its gene over A and B

D. One antibody only either anti-A or anti-B

Answer: A

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308. Test cross is used to check

A. Heterozygosity in F_1 generation

B. Independent assortment

C. Heterozygosity in F_2 generation

D. Segregation

Answer: A

Watch Video Solution

309. Mendel found that reciprocal crosses yielded indentical results. From that he concluded

A. Sex plays a role in deciding dominance of a trait

B. There is no dominance of any trait

C. There is independent assortment of the trait

D. Sex has no influence on the dominance of the trait.

Answer: D

 Watch Video Solution

310. Heterozygosity / dominance of phenotype can be determined by

A. Back cross

B. Test cross

C. Reciprocal cross

D. Hybrid cross.

Answer: B

 Watch Video Solution

311. 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

B. 0.25

C. 0.5

D. 1

Answer: C

 Watch Video Solution

312. A person with blood group AB has which of the antigens in RBCs.

A. A

B. B

C. A and B

D. None of the above

Answer: C

 Watch Video Solution

313. The graphical representation to calculate the probability of all possible genotypes of offspring in a genetic cross is called

A. Pedigree analysis

B. Punnet square

C. Chromosome map

D. Genotypic ratio

Answer: B

Watch Video Solution

314. Which of the following genotype does not produce any sugar polymer on the surface of RBCs

A. $I^A I^A$

B. $I^B i$

C. $I^A I^B$

D. ii

Answer: D

Watch Video Solution

315. In Antirrhinium two plants with pink flowers were hybridized. The F_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. rr

B. Rr

C. RR

D. rrrr

Answer: B

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

A. Out of one pair of factors, one is dominant and the other recessive

B. Alleles do not show any blending and both the characters recover as such in F_2 generation

C. Factors occur in pairs

D. Discrete unit controlling a particular character is called a factor.

Answer: B

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317. Select the correct statements from the ones given below with respect to dihybrid cross

A. Genes far apart on the same chromosomes show very few recombinations

B. Genes loosely linked in the same chromosomes show similar recombinations as the tightly linked ones

C. Tightly linked genes on the same chromosome show very few recombinations

D. Tightly linked genes on the same chromosomes show higher recombinations.

Answer: C

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318. Monohybrid test cross is

A. $1:1:1:1$

B. $1:1$

C. $9:3:4$

D. $9:3:3:1$

Answer: B

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319. Which of the following match is correct

A. Independent assortment - Segregation of factors

B. Lamarck- Natural selection

C. Hatch and Slack - Chemiosmotic theory

D. Peter Mitchell- Proposed Z-scheme

Answer: A

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320. Blood group of mother is A. That of son is B. What is blood group of father

A. B

B. A

C. O

D. None of the above

Answer: A

 Watch Video Solution

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

A. 2

B. 8

C. 16

D. 32

Answer: D

 Watch Video Solution

322. If a cross between two plants produces offspring with 50% dominant character (A) and 50% recessive character (a), then the genotype of parents are

A. $Aa \times Aa$

B. $AA \times aa$

C. $Aa \times aa$

D. $AA \times Aa$

Answer: C

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323. Multiple phenotype is seen in

A. Dominance relationship

B. Particulate inheritance

C. Monogenic inheritance

D. Polygenic inheritance

Answer: D

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324. If F_1 generation has all tall plants and ratio of F_2 generation is 3 tall : 1 dwarf, it proves

A. Law of independent assortment

B. Law of segregation

C. Law of segregation

D. Law of dominance

Answer: C

Watch Video Solution

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

A. F_1 hybrid produces four different gametes

B. F_1 hybrid is homozygous

C. Two different progenies are produced by P_1 parent

D. None of the above

Answer: A

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326. Mendel was successful in discovering the principles of inheritance as

A. He took Pea plants for his experiments

B. He was a mathematician

C. He did not encounter linkage

D. He had an indepth knowledge on hybridisation.

Answer: A

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327. Mendelian principles are not applicable in case of

A. Sex linked alleles

B. Asexually reproducing forms

C. Sexually inbreeding forms

D. Diploid homozygous forms.

Answer: B

Watch Video Solution

328. Two allelic genes are located on

A. Two homologous chromosomes

B. Two nonhomologous chromosomes

C. Any two chromosomes

D. The same chromosome

Answer: A

Watch Video Solution

329. A man with blood group 'A' marries a woman with group 'B' blood.Their child has blood group 'O' what are the gentypes of the parents ?

A. I^AI^A, I^BI^B

B. I^Ai, I^Bi

C. I^Ai, I^BI^B

D. I^AI^B, I^AI^B

Answer: B

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330. During meiosis, the alleles of the parental pair separate or segragate from each other. How many allele(s) are then transmitted to a gamete

A. One

B. Two

C. Four

D. Six

Answer: A

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

A. $RrYy, RrYY, RRYy$

B. $Rryy, RRyy, rryy$

C. $rrYy, rrYY$

D. $Rryy, RRyy$

Answer: D

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332. In a polygenic cross Aa Bb Cc $\times$ 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. 7

C. 15

D. 25

Answer: C

Watch Video Solution

333. If two Pea plants having red (dominant) coloured flowers with unknown genotypes are crossed, 75% of the flowers are red and 25% white. The genotype constitution of the two parents would be

A. Both homozygous

B. Both heterozygous

C. Both hemizygous

D. One homozygous and other heterozygous.

Answer: B

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334. Variation found in offspring are important component of

A. Genetics

B. Speciation

C. Species fixation

D. Heredity

Answer: A

Watch Video Solution

335. An allele contributed by one parent is I^A and allele contributed by the other parents is i, the blood group of offspring will be

A. A

B. AB

C. B

D. O

Answer: A

Watch Video Solution

336. Given below are assertion and reason. Point our if both are true with reason being correct explanation (A), both are true but

reason is not correct explanation (B), assertion is true but reason is wrong (C) and both are wrong (D).

Assertion. A genetist crossed two plants. He got 50% tall and 50% dwarf plants in the progeny

Reason. One parent was heterozygous tall while the other was dwarf

A. A

B. B

C. C

D. D

Answer: A

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337. F_2 generation has genotypic and phenotypic ratio of 1:2:1. It is

A. Codominance

B. Dihybrid cross

C. Monohybrid cross with complete dominance

D. Monohybrid cross with incomplete dominance.

Answer: D

Watch Video Solution

338. A man with genotype EEFfGgHH produces 'P' number of different sperms. A woman with

genotype IiLLMmNn can form 'Q' types of ova.

What is correct about '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

View Text Solution

339. A cross between tall and dwarf Pea plants, yielded 124 tall and 126 dwarf plants. Genotype of parents would be

A. TT X TT

B. TT x Tt`

C. $Tt \times Tt$

D. `Tt x tt

Answer: D

Watch Video Solution

340. A cross between two heterozygous individuals will yield homozygous individuals

A. 2

B. 4

C. 6

D. 8

Answer: A

 Watch Video Solution

341. A test cross is performed to know

A. Genotype of F_1 dominants

B. Linkage between two traits

C. Number of alleles of a gene

D. Success of intervarietal and intersepecific cross

Answer: A

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342. Haemoglobins of normal and sickle cell patient are subjected to electrophoresis. They will show

A. Same mobility

B. Different mobility

C. No mobility

D. Heamoglobin of patient does not move.

Answer: B

Watch Video Solution

343. Both alleles express in heterozygote when they are

A. Recessive

B. Lethals

C. Semidominant

D. Codominant

Answer: D

 Watch Video Solution

344. Among the seven pairs of contrasting traits in pea plant as studied by Mendel, the number of traits related to flower, pod and seed respectively were

A. 2,2,2

B. 2,2,1

C. 1,2,2

D. 1,1,2

Answer: A

345. All are dominant traits studied by Mendel

A. Axial flower, green pod, green seed

B. Green pod, inflated pod, axial flower

C. Yellow seed, violet flower, yellow pod

D. Round seed, constricted pod, axial flower.

Answer: B

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346. In the cross YYRR $\times$ yyrr, the number of green coloured seeds in F_2 generation is

A. $8/16$

B. $6/16$

C. $4/16$

D. $2/16$

Answer: C

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347. A women with straight hair marries a man with heterozygous curly hair is

A. One in four

B. Full chance

C. No chance

D. One in two.

Answer: D

Watch Video Solution

348. Which is mismatched

A. $Tt \times Tt - 3:1$

B. $Tt \times tt - 2:1$

C. $TtYy \times ttyy - 1:1:1:1:1$

D. $TtYy \times TtYy - 9:3:3:1$

Answer: B

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349. A women with blood group 'O' has a child with blood group 'O'. Father with blood group 'A' must have the genotype

A. $I^O I^O$

B. $I^A I^B$

C. $I^A I^O$

D. $I^B I^O$

Answer: C

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350. Sickle cell anamia is caused by substitution of sixth position

A. Valine by glutamic acid in α-chain of Hb

B. Valine by glutamic acid in β- chain of Hb

C. Glutamic acid by valine in α-chain of Hb

D. Glutamic acid by valine in β- chain of Hb

Answer: D

Watch Video Solution

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

A. $9/16$

B. $3/16$

C. $2/16$

D. $1/16$

Answer: C

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352. ABO blood grouping is determined by three alleles. Possble genotypes and phenotypes are

A. 3,1

B. 6,4

C. 4,6

D. 9,7

Answer: B

View Text Solution

353. Children of a father with 'O' blood group and mother with 'AB' blood group would be

A. O

B. AB

C. O or AB

D. A or B

Answer: D

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354. Carl Correns, a rediscoverer of Mendel's work, was from

A. Austria

B. Germany

C. Holland

D. Denmark

Answer: B

 Watch Video Solution

355. A man with blood group B and woman with blood group O, will have children with blood group

A. B or O

B. AB, A, B or O

C. AB or O

D. A or O

Answer: A

 Watch Video Solution

356. Given below are assertion and reason. Point out if both are true with reason being correct explanation (A), both are true but reason is not correct explanation (B), assertion is true but reason is wrong (C) and both are wrong (D).

Assertion. Hb^sHb^s is homozygous condition of sickle cell anaemia.

Reason. It occurs due to substitution of glutamic acid by valine at sixth position in β-chain of haemoglobin.

A. A

B. B

C. C

D. D

Answer: B

 Watch Video Solution

357. What is the number of alleles for blood group in an individual

A. 1

B. 2

C. 3

D. 4

Answer: B

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358. Biological unit controlling heredity is

A. Genome

B. Chromosome

C. Genotype

D. Gene

Answer: D

Watch Video Solution

359. Which mutation/ variation is not heredity

A. Genetic

B. Gametic

C. Somatic

D. Germinal

Answer: C

Watch Video Solution

360. Albinism is due to hereditary deficiency of enzyme

A. Tyrosinase

B. Amylase

C. Carbonic anhydrase

D. Acetyl cholinesterase.

Answer: A

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361. Identify the wrong statement

A. Probability of homozygous dwarf progeny in a cross $TT \times Tt$ is zero

B. Probability of homozygous tall progeny in a cross $TT \times TT$ is one

C. Probability of homozygous tall progeny in a cross `T T x tt is 0.5

D. Probability of homozygous tall progeny in a cross $TT \times TT$ is zero

Answer: C

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362. Which Mendelian idea is depricted by a cross in which the F_1 generations resembles both the parents?

A. Codominance

B. Incomplete dominance

C. Law of dominance

D. Inheritance of one gene

Answer: A

 Watch Video Solution

363. Two AB blood group persons marry and have children A, AB and B blood groups in ratio of 1:2:1. Protein electrophoresis shows

that in AB individuals both 'A' and 'B' proteins occurs. This is an example of

A. Complete dominance

B. Codominance

C. Incomplete dominance

D. Partial dominance

Answer: B

 Watch Video Solution

364. 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

 Watch Video Solution

365. What is false about sickle cell anaemia

A. Genotype Hb^AHb^S

B. Genotype Hb^AHb^A

C. Sickle shaped RBC

D. Substitution of glutamic acid by valine.

Answer: B

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366. A man has blood group O and his mother blood group A. The genotype of mother should be

A. $I^O I^O$

B. $I^A I^O$

C. $I^A I^B$

D. $I^A I^A$

Answer: B

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367. Assign the discoveries to the authors

Discovery	*Author*
(*a*) AB group	(*p*) Steiner de Castello, Sterli
(*b*) A, B and O groups	(*q*) Landsteiner
(*c*) Rh^+group	(*r*) Landsteiner and Weiner
(*d*) Sex determination in *Melandrium*	(*s*) Wester Guard and Warnike
	(*t*) Henking and Wood Cock

A. a-t,b-s,c-r,d-q

B. a-r,b-q,c-p,d-s

C. a-p,b-q,c-r,d-s

D. a-s,b-t,c-r,d-q

Answer: C

Watch Video Solution

368. Blood group of Riddhi is 'A' and her mother Ramilaben has also blood group 'A'. Which blood group can be present in her father

A. B,O

B. B,A

C. A,B,AB or O

D. A,O

Answer: C

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369. Which is correct

A. Each back cross is test cross

B. Each test cross is a back cross

C. Crossing F_2 with F_1 is called test cross

D. Crossing F_2 with P_1 is called test cross.

Answer: B

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370. Read the following statements regarding Mendelian inheritance and choose the correct option

1. Mendel's experiments had samll sample size which gave greater credibility to the data

2. A true breeding line shows a stable trait inheritance and expression for several generations

3. In a dissimilar pair of factors, one member of the pair dominates over the other

4. A recessive parental trait is expressed only in its heterozygous condition

5. Two alleles of a gene are located on homologous sites on homologus chromosomes

A. 2 alone is correct

B. 2,3 and 5 are correct

C. 1 and 4 are correct

D. 1,3 and 5 are correct

Answer: B

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371. In F_2 generation, 960 garden pea pods are produced during dihybrid cross due to self pollination of heterozygous parents. How many pods would be green and inflated

A. 240

B. 180

C. 60

D. 540

Answer: D

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372. A gamete contains

A. Many alleles of a gene

B. All alleles of a gene

C. Two alleles of a gene

D. One allele of a gene.

Answer: D

Watch Video Solution

373. What result Mendel would have got, had he self pollinated a tall F_2 plant

A. TT and Tt

B. All Tt

C. All TT

D. All tt.

Answer: C

Watch Video Solution

374. 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 gene

D. Hypostatic gene

Answer: B

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Watch Video Solution

375. Medel conduted hybridisation experiments on Garden Pea of

A. 4 years

B. 5 years

C. Six year

D. Seven years

Answer: D

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376. A cross between black flowered plant and white flowered plant yielded grey flowered

A. Codominance

B. Pseudodominance

C. Incomplete dominance

D. Epistasis

Answer: C

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377. First husband of Asha had ABO blood Type A and Their child had type O.She remarried and her second husband had ABO blood type B and their child had types AB. What is the ABO gentypes of Asha and also name her blood type?

A. ii, O

B. I^Bi, B

C. I^AI^B, AB

D. I^Ai, A

Answer: D

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378. Emasculation ensures cross pollination in

A. Staminate flower

B. Bisexual flower

C. Neuter flower

D. Pistillate flower

Answer: B

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379. A cross between yellow flowered and round fruit (both dominant) bearing plant and white flowered elongated fruit (both recessive) bearing plant yielded 20 plants in F_1 progeny which formed 960 plants in F_2 generation. The number of plants with yellow flowered and round fruits in F_1 and F_2 generations would be

A. 20960

B. 20540

C. 10180

D. 10,60

Answer: B

View Text Solution

380. If a child has blood group 'A' and his mother has blood group 'A', what are the possiblities of blood group of his father

A. $'A'$

B. $'O'$

C. $'B'$

D. All the above

Answer: D

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381. Medel proposed something was being stably passed down unchanged from parents to offspring called

A. Genes

B. Genotype

C. Factors

D. Alleles.

Answer: C

 Watch Video Solution

382. A cross between two tall Garden Pea Plants produced all tall plants. The possible genotype of the parents are

(I)TT,TT(II)TT,Tt(III)Tt,tt(IV) Tt,Tt

Correct answer is

A. III,IV

B. I,IV

C. I,II

D. II,III

Answer: C

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383. Tall(T) is completely dominant over dwarf(t). Red flower colour (R) is incompletely dominant over white (r), the heterozygous being pink. Plant having genotype of TrRr is self pollinated. What would be the proportion of plants with dwarf and pink characters in the progeny

A. $2/16$

B. $1/16$

C. $9/16$

D. $3/16$

Answer: A

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384. 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. 1600

B. 800

C. 400

D. 1200

Answer: D

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385. The phenomenon in which genes have two or more alleles that are common in a population is known as

A. Polygenic inheritance

B. Polymorphism

C. Polyploidy

D. Polygamy

Answer: B

Watch Video Solution

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

A. `T T x tt

B. $Tt \times TT$

C. tt X tt

D. $TT \times TT$

Answer: C

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387. Total number of types of gametes produced in a cross between a negro and albino parents is

A. 64

B. 16

C. 08

D. 04

Answer: D

Watch Video Solution

388. A couple both carries of sickle cell anaemia planning to get married, wants to know the chances of having anaemic progeny

A. 1

B. 0.75

C. 0.5

D. 0.25

Answer: D

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389. Fruit colour in squash is an example of

A. Dominant epistasis

B. Complementary genes

C. Inhibitrory genes

D. Recessive epistasis

Answer: A

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390. In sickle cell anaemia, the sequence of amino acid from first to seventh position of β-chain of haemoglobin S (HbS) is

A. His, Leu, Thr, Pro, Glu, Val, Val

B. Val, His, Leu, Thr,Pro,Glu, Glu

C. Thr, His Pro, Val, Pro, Val, Glu

D. Glu, His, Leu, Pro, Val, Glu, Glu

Answer: D

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391. Given below are assertion and reason. Point out if both are true with reason being correct explanation (A), both are true but

reason is not correct explanation (B), assertion is true but reason is wrong (C) and both are wrong (D).

Assertion. In a pedigree analysis, represents five unaffected offspring.

Reason. In the pedigree analysis, the offspring are numbered with arabic numerals (1,2,3...) and generation is numbered with roman numerals

A. A

B. B

C. C

D. D

Answer: B

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392. In rabbits the gene for grey fur (G) is dominant over that of black fur (g). In a litter, if 50% rabits are grey, the possible parental cross combination is

A. $GG \times Gg$

B. $GG \times GG$

C. $gg \times gg$

D. $Gg \times gg$

Answer: D

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393. A gene showing codominance has

A. One alleles dominant over other

B. Alleles tightly linked on the same chromosome

C. Alleles that are recessiv to each other

D. Both the alleles independently expressed in heterozygote.

Answer: D

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

A. Seed colour

B. Pod length

C. Seed shape

D. Flower position

Answer: B

Watch Video Solution

395. If a genotype consists of different types of alleles, it is called

A. Homozygous

B. Heterozygous

C. Monoallelic

D. Uniallelic

Answer: B

 Watch Video Solution

396. The experimental material in Mendel's experiments was

A. Pisum sativum

B. Oryza sativa

C. Mirabilis jalapa

D. None of the above

Answer: A

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397. A donor having blood AB can safely donate red blood cells to recipient having blood group type

A. A and AB

B. B and AB

C. AB only

D. O only

Answer: C

 Watch Video Solution

398. With respect to phenyl ketouria indentify which statement is not correct

A. It is an error in metabolism

B. Caused due to autosomal recessive trait

C. It is an example of pleiotropy

D. It is a case of aneuploidy

Answer: D

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399. If a cross between two plants produces offspring with 50% dominant character (A) and 50% recessive character (a), then the genotype of parents are

A. $Aa \times Aa$

B. $Aa \times aa$

C. AA xx aa`

D. AA xx Aa`

Answer: B

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400. As a result of monohybrid cross among Pea plants, the genotypic ratio obtained by Mendel is

A. $1:1$

B. $1:3:1$

C. $1:2:1$

D. $3:1$

Answer: C

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401. A male rabbit of genotype AABBDDEE is crossed with a female rabbit of genotype aabbddee to produce F_1 hybrid offspring. How many genetically different gametes can be produced by this F_1 hybrid

A. 4

B. 8

C. 16

D. 32

Answer: C

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402. Phenotype of an organism is result of

A. Mutations and linkage

B. Cytoplasmic effects and nutrition

C. Environmental changes and sexual dimorphism

D. Genotype and environment interactions

Answer: B

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403. Mating of an organism to double recessive in order to determine whether it is homozygous or heterozygous for a character is called

A. Dihybrid cross

B. Back cross

C. Test cross

D. Reciprocal cross

Answer: C

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404. What are the expected phenotypes in F_2 generation of cross RRYY $\times$ rryy

A. Only wrinkled seeds with green cotylendons

B. Only wrinkled seeds with yellow cotyldons

C. Only round seeds with green cotyledons

D. Four, round seeds with yellow cotyledons, round seeds with green cotyledons, wrinkled seeds with yellow cotyledons and wrinkled seeds with green cotyledons

Answer: B

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405. A character expressed in hybrid is

A. Dominant

B. Recessive

C. Codominant

D. Epistatic.

Answer: A

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406. $\frac{1}{4} \top , \frac{1}{2}Tt, \frac{1}{4}$ is binomial expansion of

A. $\left(\frac{1}{2}T + \frac{1}{2}t\right)^2$

B. $\left(\frac{1}{4}T + \frac{1}{4}t\right)^2$

C. $\left(\frac{1}{4}T + \frac{1}{2}t\right)^2$

D. $\left(\frac{1}{2}T + \frac{1}{4}t\right)^2$

Answer: A

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407. An example of codominance is

A. Eye colour is Drosophilia

B. Seed shape and colour in pea

C. AB blood group in man

D. Haemophilia in man

Answer: C

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408. Three alleles namely I^A, I^B and i control the blood grouping in human beings. How

many genotypes are likely to be present in human population

A. 2

B. 4

C. 5

D. 6

Answer: D

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409. A pure breeding plant with red dot on leaves was crossed with pure breeding white dotted plants. The heterozygotes have both red and white dots. On self pollination of F_1, what fraction of plants show both red and white dots on leaves

A. $\frac{2}{4}$

B. $\frac{1}{4}$

C. $\frac{2}{3}$

D. $\frac{3}{4}$

Answer: A

 Watch Video Solution

410. How many phenotypic classes are produced for a pair of characters in a monohybrid test test cross

A. 2

B. 4

C. 1

D. 3

Answer: A

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411. Which of the following disorders is not caused by pleiotropic alleles

A. Sickle cell anaemia

B. Cystic fibrosis

C. Phenylketonuria

D. Erythroblastosis foetails.

Answer: D

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412. Alleles for gene I are I^A, I^B and I^O. If I^A and I^B are dominant over I^O, the $I^A = I^B > I^O$ indicates

A. Codominance

B. Recessive

C. Weiner hypothesis

D. Dominance

Answer: A

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413. Arrange the follwing in decreasing order based on the results obtained in the F_2 progeny of dihybrid cross

(a) Total number of parental genotype

(b) Total number of recombinant genotypes

(c) Total phenotypes

(d) Total genotypes

A. c,b,d,a

B. a,c,d,b

C. d,a ,c, b

D. d,b,c,a

Answer: D

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414. In the first step of monohybrid cross experiment, Mendel selected Pea plants which were

A. Pure tall as male and pure dwarf as female

B. Pure tall as female and pure dwarf as male

C. Heterozygous tall as male and pure dwarf as female

D. Heterozygous tall as female and pure dwarf as male.

Answer: B

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

A. It is removal of anthers from flower

B. It is done before enthesis

C. It is to avoid self pollination

D. It is done in flowers of plants selected as male parent.

Answer: D

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416. Which statement is wrong

A. Law of independent assortment is because of crossing over

B. Apart from Pisum sativum, Mendel had also worked on Hieraceum

C. A plant with genotype TTRR will produce 3 kinds of gametes

D. The test cross ratio of a dihybrid is 1:1:1:1

Answer: C

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417. Which law of Mendelian genetics can be considered universal

A. Dominance

B. Codominance

C. Independent assortment

D. Segregation

Answer: D

 Watch Video Solution

418. What should be the minimum number of traits taken into consideration to prove Mendel's law of independent assortment

A. One

B. Two

C. Three

D. Four

Answer: B

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419. Find the statements

(i) F_1 progeny is first hybrid generation and progeny resembles either of parents

(ii) F_2 progeny is a resultant hybrid generation of cross pollination among F_1 progeny and the progeny shows both dwarf and tall plants

(iii) F_2 progeny is second hybrid generations

produced by selfing F_1 hybrides and progeny contains both dwarf and tall plants

(iv) Proportion of probability of plants that are dwarf is 1/4 of F_2 plants while $\frac{3}{4}$ of F_2 plants are tall

A. i, ii, iii, iv

B. i, iii, iv

C. i,ii,iv

D. iii,iv

Answer: B

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420. Pea Plant with round Yellow seeds (RRYY) is crossed with another pea plant having wrinkled green seeds (rryy). F_2 progeny consist of

(i) Heterozygous for both shape and colour of seeds -

(ii) Dominant for colour and recessive for shape -

(iii) Homozygous for both shape and colour -

(iv) Heterozygous for seed shape only -

A. i-2, ii-4,iii-3,iv-8

B. i-4,ii-2,iii-3,iv-8

C. i-3,ii-4,iii-8,iv-2

D. i-4,ii-3,iii-2,iv-8

Answer: D

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421. A pea plant with round seeds having large starch grains is crossed with another pure pea plant with wrinkled seeds having small starch

grains. The F_1 heterozygotes formed are self pollinated. What is the phenotypic ratio of plants with round seeds and intermediate starch grains to plants with wrinkled seeds and larger starch grains expected in F_2 generation.

A. $5:6$

B. $2:3$

C. $3:4$

D. $6:1$

Answer: D

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422. The genes for ABO blood group is located on

A. Chromosome 4

B. Chromosome 7

C. Chromosome 9

D. Chromosome 11

Answer: C

Watch Video Solution

423. In..... Both dominant and recessive alleles lack their dominant and recessive relationships

A. Incomplete dominance

B. Polygenic inheritance

C. Multiple alleles

D. Codominance

Answer: D

424. Mendel's law of segregation is also known as

A. Law of seperation

B. Law of dominance

C. Law of purity of gametes

D. Law of independent assotment

Answer: C

425. The gene disorder phenylketonuria is an example for

A. Polygenic inheritance

B. Pleiotropy

C. Multiple alleles

D. Multiple factor

Answer: B

 Watch Video Solution

426. What will be genotype of parents of a child with 'O' blood group

A. $I^AI^A \times I^AI^A$

B. $I^BI^B \times I^BI^B)$

C. $I^AI^A \times I^BI^B$

D. $I^Ai \times I^Bi$

Answer: D

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427. A cross between two pea plants, tall with axial flowers and dwarf with terminal flowers, produced offspring tall with axial flowers and tall with terminal flowers in the ratio 1:1. What will be genotypes of parents

A. $TTAa \times$ ttaa`

B. `TtAa xx ttaa

C. `TtA A xx ttaa

D. `T TA A xx ttaa

Answer: A

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428. In quantitative inheritance, when a character is controlled by two pair of genes, the ratio obtained in F_2 generation is .....

A. $1:2:1$

B. $1:4:6:4:1$

C. $9:3:3:1$

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

Answer: B

Watch Video Solution

429. During a dihybrid cross with contrasting characters in F_2 generation parenal genotypes will appear in ..... ratio

A. $1/16$

B. $2/16$

C. $3/16$

D. $9/16$

Answer: B

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430. During a dihybrid cross in the F_2 generation, the ratio of inidviduals showing one dominant and other recessive character will be ..... of parents with contrasting characters

A. $4/16$

B. $6/16$

C. $8/16$

D. $9/16$

Answer: B

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431. Two pink flowered Snapdragon plants (Rr) are self pollinated. Probability of offspring having white flower is

A. 0.25

B. 0.5

C. 0.75

D. $2.5\ \%$

Answer: A

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432. When Mendel self pollinated the F_1 plants of genotype RrYy, in the F_2 generation, the yellow and green colour segregated in the ratio

A. $1:2:1$

B. $3:1$

C. $9:3:3:1$

D. $1:1$

Answer: B

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433. In a testcross involving F_1 dihybrid flies, more parental-type offspring were produced

than the recombinant-type offspring. This indicates:

A. Both the characters are controlled by more than one gene

B. The two genes are located on two different chromosomes

C. Chromosomes failed to separate during meiosis

D. The two genes are linked and present of the same chromosome.

Answer: D

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434. A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the F_1 plant were selfed the resulting genotypeswere in the ratio of

A. 3:1-dwarf: tall

B. 1:2:1- tall homozygous : tall heterozygous : dwarf

C. 1:2:1- heterozygous : tall homozygous : dwarf

D. 3:1-tall : dwarf

Answer: B

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435. A true breeding plant is

A. Always homozygous recessive in its genetic

B. One that is able to breed on its own

C. Produced due to cross pollination among unrelated plants

D. Near homozygous and produces offspring of its kind.

Answer: D

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436. Match the columns and choose the correct option

I		II	
(*a*)	Dominance	(*i*)	Many genes govern a single chracter
(*b*)	Codomiance	(*ii*)	In a heterozygous organism only one allele expresses itself
(*c*)	Pleiotropy	(*iii*)	In a heterozygous organism both alleles express themselves fully
(*d*)	Polygenic inheritance	(*iv*)	A single gene influences many characters

A. a-iv,b-iii, c-*i*,d-ii

B. a-ii,b-*i*,c-iv,d-iii

C. a-ii,b-iii,c-iv, d-*i*

D. a-iv,b-i,c-ii,d-iii

Answer: C

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437. If'A' respresent the dominant gane and 'a' represent its recessive alleles, what will be result of cross between Aa and aa

A. All will exhibit dominant phenotype

B. All will exhibit recessive phenotype

C. Dominant and recessive phenotypes will be 50% each

D. Dominant phenotype will be 75%

Answer: C

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438. Which one from those given below is the period for Mendel's hybridisation experiments

A. 1856-1863

B. 1840-1850

C. 1857-1869

D. 1870-1877

Answer: A

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439. Among the following character which one was not cosidered by Mendel in his experiments on Pea

A. Stem-Tall or dwarf

B. Trichomes-Glandular or nonglandular

C. seed-Green or Yellow

D. Pod- Inflated or constricted

Answer: B

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440. The genotypes of husband and wife are I^AI^B and I^Ai. Among the blood groups of their children how many different genotypes and phenotypes are possible

A. 3 genotypes, 3 phenotypes

B. 3 genotypes, 4 phenotypes

C. 4 genotypes, 3 phenotypes

D. 4 genotypes, 4 phenotypes

Answer: C

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Check Your Grasp

1. Reproduction blood theory of heredity was proposed by

A. Pythagoras

B. Empedocles

C. Aristotle

D. Malpighi

Answer:

Watch Video Solution

2. Who gave the 'Theory of pangenesis'

Or

Who is related with 'Galapagos Island'

A. Lamarck

B. Maupertius

C. Kolreuter

D. Darwin

Answer:

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3. Mendel's work was republised in Flora in the year

A. 1884

B. 1901

C. 1906

D. 1894

Answer:

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4. Johannseen coined the term

A. Pure line

B. Genotype

C. Gene

D. All the above

Answer:

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5. In Primrose despite the presence of dominant allele of red flower colour, the flowers appear white when

A. Humidity is less than 50%

B. Temperature is less $23^{\circ} C$

C. Light intensity is low.

D. The statement is incorrect.

Answer:

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6. In Himalayan Rabbit, the pigmentation of extremities can disappear when

A. It is extreme winter

B. temperature is high

C. Extremities are covered

D. Extremities are kept dry

Answer:

 Watch Video Solution

7. In 9:3:3:1 hybrid phenotypic ratio, the number of hybrid dominant of both trait is

A. 9

B. 6

C. 5

D. 4

Answer:

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8. which one shows incomplete dominance in pigmentation ?

A. Snapdragon

B. Four 'O' Clock

C. Andalusian Fowl

D. All the above

Answer:

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9. Gametes of a hybrid possess

A. Both the alleles

B. Three- types - both alleles, one alleles, second allele

C. Two type , 50% one allele, 50% second alleles

D. One type with one of the alleles

Answer:

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10. Which one shows codominance ?

A. Alleles of blood groups A and B

B. Alleles of normal blood and sickle cell

C. Alleles for dots and bands in Ladybrid Beetle

D. All the above

Answer:

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11. Blood group AB possesses

A. Both antigens A and B

B. None of the blood group antigens

C. Agglutination factor a

D. Agglutination factor b.

Answer:

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12. Isosalleles are

A. Similar alleles with different expression

B. Alleles with similar phenotype

C. Different gene with similar expression

D. All the above

Answer:

13. Pseudoalleles are

A. Two closely placed gene with nearly similar expression

B. Forms of same alleles

C. Mutations in different genes producing alleles with similar effect.

D. Alleles producing similar effect under changed condition

Answer:

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14. The offspring of two creeper chicken are

A. All creepers

B. Both homozygous and heterozygous creepers

C. Creepers and normal in the ratio of 3:1

D. Creepers and normal in the ratio of 2:1

Answer:

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15. In rice, green colour of leaf can be develop either in the presence of recessive allele p or another gene I. The latter gene is

A. Suppressor

B. Epistatic

C. Complementary

D. Supplementary

Answer:

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16. Epistasis was first studied by

A. Morgan

B. Bateson

C. Johannsen

D. Punnet

Answer:

Watch Video Solution

17. In Summer Sqash, the fruit colour can be white, yellow and green. The appearance of white colour is due to a dominant gene W. The latter is

A. Inhibitor gene

B. Complementary genes

C. Epistatic gene

D. Supplementary gene

Answer:

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Watch video solution

18. Onion bulb shows white colouration instead of red - yellow pigmentation when alleles of another gene I is present. It is an example of

A. Recessive epistasis

B. Dominant epistasis

C. Dominant-recessive epistasis

D. Collaborative supplementary gene.

Answer:

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19. Complementary gene were discovered by

A. Mendel

B. De Vries

C. Bateson and Punnet

D. Morgan

Answer:

Watch Video Solution

20. A cross between two white flowered varieties of Sweet Pea yields purple flowered plants due to

A. Epistasis

B. Complementary genes

C. Codominance

D. Supplementary gene

Answer:

Watch Video Solution

21. Appearance of Walnut-Comb in poultry in a cross between pure Pea-Comb and Rose-Comb animals is due to

A. Duplicate genes

B. Complementary genes

C. Additive genes

D. Collaborative supplementary gene.

Answer:

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22. Which is true of Hb^S gene ?

A. Pleiotropic gene

B. Polygene

C. Polymeric gene

D. Related to multiple factor inheritance

Answer:

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23. Quantitative/polygenic inheritance was first noted by

A. Davanport

B. Galton

C. Mendel

D. Kolreuter.

Answer:

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