For More Questions Click Here

1. Which contribute to the success of Mendel?

(a) qualitative analysis of data

(b) observation of distinct inherited traits

(c) his knowledge of biology

(d) consideration of one character at one time.

Answer and Explanation:

1. (c): Consideration of one character at one time contribute to the success of Mendel. Mendel's contribution was unique because of his methodological approach to a definite problem, use of clear cut variables and application of mathematics (statistics) to the problem. Using pea plants and statistical methods, Mendel was able to demonstrate that traits were passed from each parent inheritance of genes.

2. Two linked genes a and b show 20% recombination, the individuals of a dihybrid cross between ++/+ + x ab/ab shall show gametes

(a) ++ 80 : ab : 20

(b) ++ 50 : ab : 50

(c) ++ 40 : ab 40 : + a 10 : + b : 10

(d) ++ 30 : ab 30 : + a 20 : + b : 20

Answer and Explanation:

2. (c): Two linked genes a and b show 20% recombination. The individuals of a dihybrid cross between + +/+ + x ab/ab shall show gametes + + 40 : + a 10 : + b : 10

3. A normal green male Maize is crossed with albino female. The progeny is albino because

(a) trait for a albinism is dominant

(b) the albinos have biochemical to destroy plastids derived from green male

(c) plastids are inherited from female parent

(d) green plastids of male mus. have mutated.

Answer and Explanation:

3. (c): normal green male maize is crossed with albino female. The progeny is albino because; plastids are inherited from female parents.

4. tt mates with Tt. What will be characteristic of offspring?

(a) 75% recessive

(b) 50% recessive

(c) 25% recessive

(d) All dominant.

Answer and Explanation:

4. (b): When tt mate with Tt, the characteristics of offspring will be 50% recessive. On mating tt and Tt, 50% individuals are recessive and 50% inhibit heterozygous dominant characteristics.

5. ABO blood group system is due to

(a) Multifactor inheritance

(b) Incomplete dominance

(c) Multiple allelism

(d) Epistasis.

Answer and Explanation:

5. (c): ABO blood group system is due to multiple allelism. A gene can have more than two alleles or allelomorphs, which can be expressed by mutation in wild form in more than one ways. These alleles or allelomorphs make a series of multiple alleles. The mode of inheritance in case of multiple alleles is called multiple allelism. A well known and simplest example of multiple allelism is the inheritance of ABO blood groups in human beings. In human population, 3 different alleles for this character are found – IA IB and 1°. A person is having only two of these three alleles and blood type can be determined.

6. In a genetic cross having recessive epistasis, F2 phenotypic ratio would be

(a) 9:6:1

(b) 15 : 1

(c) 9 : 3 : 4

(d) 12 : 3 : 1.

Answer and Explanation:

6. (c): In a genetic cross having recessive epistasis, F2 phenotypic ratio would be 9:3 :4. The recessive epistasis is illustrated by coat colour in mouse, the coat colour is determined by A/a pair, recessive allele b is epistatic over A/a. Thus, in the presence of bb, both A and aa give the same phenotype (albino). The F2 ratio is generally 9 : 3 : 4.

7. Cross between AaBB and aaBB will form

(a) 1 AaBB : laaBB

(b) All AaBB

(c) 3AaBB : laaBB

(d) 1 AaBB : 3aaBB.

Answer and Explanation:

7. (a): Cross between AaBB and aaBB will form 1 AaBB : 1 aaBB. On crossing, AaBB x aaBB gives 50% individuals having genotype AaBB and 50% individuals having genotype aaBB.

8. RR (Red) Antirrhinum is crossed with white (WW) one. Offspring RW are pink. This is an example of

(a) dominant-recessive

(b) incomplete dominance

(c) hybrid

(d) supplementary genes.

Answer and Explanation:

8. (b): RR (Red) Antirrhinum is crossed with white (ww) one. Offspring RW are pink. This is an example of incomplete dominance. Incomplete dominance may be defined as the partial expression of both alleles in heterozygote so that the phenotype is intermediate between those of homozygotes.

In plants like the Snapdragon (Antirrhinum majus), when a plant bearing red (RR) flowers is crossed with the plant bearing white (it) flowers, the flowers of F, plants were crossed to each other, F2 generation showed red (RR), pink (Rr) and white (rr) flowered plants in the ratio of 1 : 2 :1. Dominance thus appeared to be partial or incomplete.

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

(a) co dominant

(b) supplementary

(c) complementary

(d) recessive.

Answer and Explanation:

9. (d): The allele which is unable to express its effect in the presence of another is called recessive. A member of a pair of alleles that does not show its effect in the phenotype in the presence of any other allele. It is denoted by small letter.

10. Blue eye colour is recessive to brown eye colour. A brown eyed man whose mother was blue eyed marries a blue-eyed woman. The children will 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 and Explanation:

10. (a): Blue eye colour is recessive to brown eye colour. A brown eyed man whose mother was blue eyed marries a blue eyed woman. The children shall be both blue eyed and brown eyed 1:1. The brown eyed man will have the genotype Bb and his wife bb. Hence Bb x bb = Bb: bb. Hence, the ratio is 1 : 1.