QB365 Question Paper Software
12th Standard - Biology
Principles of Inheritance and Variation Assertion and reason

Exam Time: 00:20 Hrs
Roll No:
Date: 27/09/2025
Total Marks: 10

Assertion and reason 10 x 1 = 10

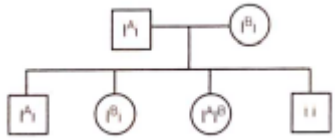
1. **Assertion:** Mendel was successful in his hybridisation experiments.
   Reason : Garden pea proved to be an ideal experimental material
   Codes :
   (a) Both assertion and reason are true and reason is the correct explanation of assertion.
   (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
   (c) Assertion is true but reason is false.
   (d) Both assertion and reason are false

2. **Assertion :** In a monohybrid cross, F_1 generations indicate dominant characters.
   Reason : Dominance occurs only in heterozygous state.
   Codes :
   (a) Both assertion and reason are true and reason is the correct explanation of assertion.
   (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
   (c) Assertion is true but reason is false.
   (d) Both assertion and reason are false

3. **Assertion :** A gene may have several allelomorphs.
   Reason : Wild form can mutate in more than one ways.
   Codes :
   (a) Both assertion and reason are true and reason is the correct explanation of assertion.
   (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
   (c) Assertion is true but reason is false.
   (d) Both assertion and reason are false

4. **Assertion :** Y chromosome causes maleness.
   Reason : If the number of X chromosome is more than one, femaleness dominates.
   Codes :
   (a) Both assertion and reason are true and reason is the correct explanation of assertion.
   (b) Both assertion and reason are true but the reason is not the correct explanation of assertion.
   (c) Assertion is true but reason is false.
   (d) Both assertion and reason are false.

5. Given below is the pedigree chart of a non-Mendelian inheritance in human. The square represents male and the circle represents female. $1^A, 1^B$, i represents the alleles of gene I which determines blood group in humans.



Assertion (A) : The given pedigree chart repesents codominance.
Reason (R) : In codominance, the F_1-generation resembles both the parents
(a) If both A and Rare true and R is the correct explanation of A
(b) It both A and R are true, but R is not the correct explanation of A
(c) If A is true, but R is false
(d) If A is false, but R. is true

6. **Assertion:** A good example of multiple alleles is ABO blood group system.
Reason: When IA and IB alleles are present together in ABO blood group system, they both express their own types.
Codes:
(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(c) If Assertion is true but Reason is false.
(d) If both Assertion and Reason are false.

7. **Assertion (A):** The maximum frequency of combination that can result from crossing over between linked genes is 50%.
Reason (R) : Linked genes show higher frequency of crossing over if the distance between them is longer
Codes:
a) Both (A)and (R) are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) are (R)false

8. **Assertion (A) :** In codominance each gene has more than two alleles
Reason (R): A gamete will have more than three alleles
Codes:
a) Both (A)and (R) are true and (R) is the correct explanation of (A)
b) Both (A) and (R) are true and (R) is not the correct explanation of (A)
c) (A) is true but (R) is false
d) Both (A) are (R)false

9. **Statement I:** Sutton and Boveri proposed chromo8Omal theory of inheritance
Statement Il : Chromosomes and genes show, similarity in pattern of segregation
Codes:
a) Both Statement I & Statement II are true and Statement is the correct explanation of Statement I.
b) Both Statement I & Statement II are true and Statement II is not the correct explanation of Statement I.

c) Statement I is true but Statement II is false
d) Both Statement I & Statement II are false

10. **Statement I:** Klinefelter male is positive for Barr body.
Statement II : In Klinefelter male, one extra X chromosome is present.
Codes:
a) Both Statement I & Statement II are true and Statement is the correct explanation of Statement I.
b) Both Statement I & Statement II are true and Statement II is not the correct explanation of Statement I.
c) Statement I is true but Statement II is false
d) Both Statement I & Statement II are false