



Class 12 Biology | Principles Of Inheritance And Variation

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. A heterozygous tall pea plant is crossed with a dwarf plant. Expected tall:dwarf ratio is

- A. 1:1 B. 1:3 C. All tall D. 3:1

2. Selfing an Aa plant gives what fraction of aa offspring?

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

3. A test cross uses an individual with the genotype

- A. Homozygous dominant always
B. Heterozygous always
C. Unknown dominant only
D. Homozygous recessive

4. For unlinked genes, AaBb produces how many equally likely gamete types?

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

5. The phenotypic ratio 9:3:3:1 in an F₂ supports

- A. Independent assortment with complete dominance
B. Only maternal inheritance
C. Complete linkage
D. Absence of segregation

6. Pink snapdragons selfed produce red:pink:white in the ratio

- A. 3:1:0 B. 1:2:1 C. 9:3:4 D. 1:1:1

7. Expression of both I^A and I^B in blood group AB illustrates

- A. Incomplete dominance
B. Sex linkage
C. Complete dominance
D. Codominance

8. An I^Ai parent and an I^Bi parent can produce a child with blood group

- A. A, B, AB or O
B. Only AB
C. Only A or B
D. Only O

9. Two linked genes are more likely to be inherited together when they are

- A. Closer on the same chromosome
B. Always on mitochondrial DNA
C. On different chromosomes
D. Farther apart on the same chromosome

10. A trait controlled by several genes with additive effects is

- A. Polygenic
B. Always sex-linked
C. Always mitochondrial
D. Always recessive

11. One gene influencing several phenotypic traits shows

- A. Independent assortment
B. Pleiotropy
C. Codominance necessarily
D. Polyploidy

12. A normal man and carrier woman for haemophilia have what fraction of sons expected to be affected?

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

13. A human male receives his X chromosome from his

- A. Father
B. Both parents equally as one chromosome
C. Mother
D. Paternal grandfather directly

14. Trisomy of chromosome 21 causes

- A. Sickle-cell anaemia B. Turner syndrome
C. Down syndrome D. Klinefelter syndrome

15. An individual with XO sex chromosomes has

- A. Down syndrome B. Klinefelter syndrome
C. Phenylketonuria D. Turner syndrome

ANSWER KEY — check after completing all 15 questions

1.A 2.B 3.D 4.A 5.A 6.B 7.D 8.A 9.A 10.A 11.B 12.C 13.C 14.C 15.D

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper