Class-XII
BIOLOGY (044)
Chapter-5 (Principal of Inheritance and variation)
ASSIGNMENT-8
(One mark)

1. State a difference between a gene and an allele.
2. Name the respective pattern of inheritance where F_1 phenotype
   (a) Does not resemble either of the two parents and is in between the two
   (b) Resembles only one of the two parents.
3. A garden pea plant (A) produced inflated yellow pod, and another plant (B) of the same Species produced Constricted green pods. Identify the dominant traits.
4. A garden pea plant produced axial white flowers. Another of the same species produced constricted green Pods. Identify the dominant traits.
5. Write the possible type genotypes, Mendel got when he crossed F_1 tall pea plants with a Dwarf pea plant.
6. How many kinds of phenotype would you expect in F_2 generation in a monohybrid cross?
7. Mention any two contrasting traits with respect to seed in pea plant that were studied by Mendel.
8. What are ʻtrue breeding linesʼthat are used to study inheritance pattern of traits in plants?
9. Mention the type of alleles that expresses itself only in homozygous state in an organism.
10. Name the type of cross that would help to find the genotype of a pea plant bearing violet Flowers.

(Two mark)

11. During a monohybrid cross involving a tall pea plant with a dwarf pea plant, the offspring Population involving a true breeding tall and a true breeding dwarf pea plant.
12. With the help of Punnett square, find the percentage of heterozygous individuals in a F_2 Population in a Cross involving a true breeding pea plant with green pods and a true Breeding pea plant with yellow pods respectively.
13. The phenotypic and genotypic ratio in F2 generation are same in a certain kind of Inheritance. Name an organism inn which it occurs and mention the kind of inheritance Involved.
14. When a tall plant was selfed, it produced one fourth of its progeny as dwarf. Explain with the help of a Cross.
15. How would you find genotype of a tall pea plant bearing white flowers? Explain with the help of a cross. Name the type of cross you would use.
16. Explain co-dominance with the help of one example.
17. When does a geneticist need to carry a test cross? How is it carried?
18. What is a test cross? How can it decipher the heterozygosity of a plant?
19. Work out a cross to find the genotype of a tall pea plant. Name the type of cross.
20. With the help of one example, explain the phenomenon of co-dominance and multiple allelism in human Population.

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