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CLASS – XII : BIOLOGY

- 1 How many different types of gametes can be formed by F₁ progeny, resulting from the following cross: AABbCc × aabbcc?
 - 2 When a tall and red flowered individual is crossed with dwarf and white flowered individual, phenotype in the progeny is dwarf and white. What will be the genotype of tall and red flowered individual?
 - 3 In sweet peas, genes C and P are necessary for color in flowers. The flowers are white in absence of either both of the genes. What will be the percentage of colored flowers in the offspring of the cross CcPp × ccpp?
 - 4 What will be the offspring if a homozygous red flowered plant is crossed with homozygous white flowered plant?
 - 5 Why Mendel was not able to comment on recombination and crossing over?
 - 6 A woman with normal vision, but whose father was color blind marries a color blind, man. Suppose the fourth child of this couple was a boy, will he be colorblind?
 - 7 Give reasons why vegetatively reproducing crop plants are best suited for maintaining hybrid vigour?
 - 8 Albinism is known to be due to an autosomal recessive mutation. The first child of a couple with normal skin pigmentation was an albino. What is the probability that their second child will also be an albino?
 - 9 Which types of seeds were taken by Mendel in a dihybrid cross?
 - 10 Why 9:3:3:1 phenotypic expression is seen in a dihybrid cross?
 - 11 Mr Sharma has Bb autosomal gene pair and b allele sex linked. What will be the proportion of Bd in sperms?
 - 12 What is the genotypes of the parents if the four children have following blood groups A, B, AB and O?
 - 13 Design a cross where two individuals produces offspring with 50% dominant character (A) and 50% recessive character (a)?
 - 14 Why Mendel was successful in discovering the principles of inheritance?
 - 15 What is Philadelphia chromosome?
- Text for Assertion Reason. (FROM QUESTIONS 16-25)
- 16 Chromosomes are invisible in non dividing cell
 - 17 The two sister chromatids attached to their centromeres are called duplicated chromosomes.
 - 19 It is advantageous for organisms to have chromosomes in pairs
 - 20 Organisms with large number of chromosomes can generate a greater amount of variation in their progeny.

- 21 Some genetic regions in both prokaryotes and eukaryotes are highly mobile.
- 22 Translocation can serve as genetic markers.
- 23 Polyploidy cells are larger than diploid cells.
- 24 Red cells are particularly vulnerable to G6PD deficiency.
- 25 Polytene chromosomes have high amount of DNA.
- 26 Two genes R and Y are located very close on the chromosomal linkage map of maize plant. When RRY and rry genotypes are hybridized what will F₂ segregation show?
- 27 What is the primary source of allelic variation?
- 28 What is coupling and repulsion?
- 29 What are Balbiani rings?
- 30 Using imprints from a plate with complete medium and carrying bacterial colonies, you can select streptomycin resistant mutants and prove that such mutations do not originate as adaptation. What are these imprints used for?