

**CLASS : XII**  
**SUBJECT : BIOLOGY**

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- 1) What are extra nuclear genes?
- 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 x ccPp?
- 4) If both the parents are carriers for thalassemia which is an autosomal recessive disorder. What are the chances of pregnancy resulting in an affected child?
- 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 vegetative reproducing crop plants are best suited for maintaining hybrid vigor?
- 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) A human male produces sperms with genotypes AB, Ab, aB and ab pertaining to diallelic characters in equal proportions. What is the corresponding genotype of this person?
- 11) Mr Sharma has Bb autosomal gene pair and b allele sex linked. What will be the proportion of Bd in sperms?
- 12) What are 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 produce offspring with
  - a) 50% dominant character
  - b) and 50% recessive character.
- 14) Polyploidy can be induced by the application of
  - (a) auxin
  - (b) kinetin
  - (c) colchicines
  - (d) ethylene
- 15) The recessive genes located on the X-chromosome in humans are always
  - (a) Lethal
  - (b) sub-lethal
  - (c) expressed in males
  - (d) expressed in females

Text for Assertion Reason. (FROM QUESTIONS 16-25)

- 16) Person suffering from hemophilia fails to produce blood clotting VIII
- 17) The two sister chromatids attached to their centromeres are called duplicated chromosomes.
- 18) The non allelic gene for red hair and freckles are usually inherited together
- 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) one genetic regions in both prokaryotes and eukaryotes are highly mobile.
- 22) Chromosomal aberrations are caused by a break in the chromosome or its chromatid.
- 23) The absence of testosterone receptors produces babies that look like girls who should have been boys.
- 24) All X-linked traits are expressed in males
- 25) Red cells are particularly vulnerable to G6PD deficiency
- 26) Two genes R and Y are located very close on the chromosomal linkage map of maize plant. When RRYY and rryy genotypes are hybridized what will F<sub>2</sub> segregation show?
- 27) Barr is found in the cytoplasm during (a) interphase in cell of female mammal (b) interphase in cell of male mammal (c) prophase in cell of female mammal (d) prophase in cell of male mammal.
- 28) Diploid cells have
- (a) Two chromosomes (b) one set of chromosomes (c) two pairs of homologous chromosomes (d) two sets of chromosomes
- 29) A normal woman whose father was colorblind is married to a normal man, the sons will be
- (a) 75% colorblind (b) 50% colorblind (c) all colorblind (d) all normal
- 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?

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