

Class : XII<sup>th</sup>  
Date :

Subject : BIOLOGY  
DPP No. : 2

## Topic :- Principles Of Inheritance & Variation

- In pea plants, yellow seeds are dominant to green. If a heterozygous yellow seeded plant is crossed with a green seeded plant, what ratio of yellow and green seeded plants would you expect in  $F_1$  generation?  
a) 50 : 50                      b) 9 : 1                      c) 1 : 3                      d) 3 : 1
- Who was fly men of genetics?  
a) Sutton                      b) Pasteur                      c) Robert Hooke                      d) TH Morgan
- Mendel's contribution for genetic inheritance was  
a) The idea that genes are found on chromosomes  
b) Providing a mechanism that explains patterns of inheritance  
c) Describing how genes are influenced by the environment  
d) Determining that the information contained in DNA codes for proteins
- The genotypic ratio of a monohybrid cross in  $F_2$ -generation is  
a) 3 : 1                      b) 1 : 2 : 1                      c) 2 : 1 : 1                      d) 9 : 3 : 3 : 1
- Baldness is more common in men than in woman. It could be explained on the basis that  
a) Genes of baldness are located on X-chromosomes only  
b) Baldness genes are located on Y-chromosomes  
c) Genes of baldness are autosomal but influenced by androgens  
d) None of the above
- How many pairs of contrasting characters in pea pod were chosen by Mendel?  
a) 3                      b) 5                      c) 7                      d) 9
- A mutagen pollutant is  
a) Organophosphates                      b) Resins  
c) Chlorinated hydrocarbons                      d) Nitrogen oxides
- Both chromosome and gene (Mendelian factors) whether dominant or recessive are transmitted from generation to generation in which form  
a) Changed                      b) Unaltered form                      c) Altered form                      d) Disintegrated
- Pedigree analysis is very important in human beings because

- a) It helps genetic counselors to avoid disorders  
 b) It shows origin of traits  
 c) It shows the flow of traits in family  
 d) All of the above
10. Genes when present in homozygous condition results in non – viable progeny, the factor responsible for such conditions are  
 a) Polygenes                      b) Linked genes                      c) Lethal genes                      d) Epistatic genes
11. Turner’s syndrome caused due to the absence of  
 a) One X-chromosome (44 with XO)                      b) One Y-chromosome  
 c) One X-and Y-chromosome                      d) Two X-chromosome
12. The recessive genes located on X-chromosome in humans are always  
 a) Lethal                      b) Sub-lethal                      c) Expressed in males                      d) Expressed in females
13. Strength of the linkage between the two genes is  
 a) Proportionate to the distance between them  
 b) Inversely proportionate to the distance between them  
 c) Depend on the chromosomes  
 d) Depend upon the size of chromosomes
14. Fruitfly is excellent model for genetics because of  
 I. Small life cycle (two week)  
 II. Can be feed on simple synthesis medium  
 III. Single mating produce large number of progeny  
 IV. Clear differentiation of sexes  
 V. Many heredity variation can be seen with low power microscopes  
 Choose the correct option  
 a) I, II and III                      b) III, IV and V                      c) I, IV and V                      d) All of these
15. In Guinea pigs, black short hair (BBSS) is dominant over white long hair (bbss). During a dihybrid cross, the  $F_2$ -generation individuals with genotypes BBSS, BbSS, BBSs and BbSs are in the ratio of  
 a) 9 : 3 : 3 : 1                      b) 4 : 2 : 1 : 2                      c) 1 : 2 : 1 : 2                      d) 1 : 2 : 2 : 4
16. When both parents are of blood type AB, they can have children with  
 a) A, B, AB and O blood types                      b) A, B, and AB blood types  
 c) A and B blood types                      d) A, B and O blood types
17. Test cross is  
 a) Recessive  $F_1$ -plant crosses with dominant  $F_2$ -plant  
 b) Recessive  $F_2$ -plant crosses with dominant  $F_3$ -plant  
 c) Dominant  $F_2$ -plant crosses with recessive parent plants  
 d) Dominant  $F_2$ -plant crosses with heterozygous parent plants

18. The phenomenon of a single gene regulating several phenotypes is called
- a) Multiple allelism
  - b) epistasis
  - c) Incomplete dominance
  - d) Pleiotropism
19. If two pea plants having red (dominant) coloured flowers with unknown genotypes are crossed, 75% of the flowers with unknown genotypes are crossed, 75% of the flowers are red and 25% are white. The genotypic constitution of the parents having red coloured flowers will be
- a) Both homozygous
  - b) One homozygous and other heterozygous
  - c) Both heterozygous
  - d) Both hemizygous
20. A woman has a haemophilic son and three normal children. Her genotype and that of her husband with respect to this gene would be
- a)  $XX$  and  $X^hY$
  - b)  $X^hX^h$  and  $X^hY$
  - c)  $X^hX^h$  and  $XY$
  - d)  $X^hX$  and  $XY$