

# DPP

DAILY PRACTICE PROBLEMS

Class : XII<sup>th</sup>

Date :

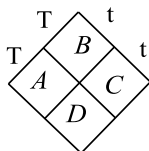
Subject : BIOLOGY

DPP No. : 1

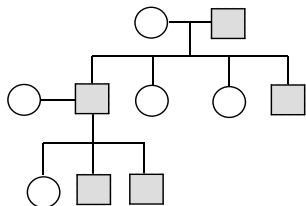
## Topic :- Principles Of Inheritance & Variation

1. A condition characterized by not having an exact number of chromosomes in a multiple of haploid set is called
- a) Polyploidy                      b) Synploidy                      c) aneuploidy                      d) None of these

2. Choose correct option for *A*, *B*, *C* and *D*

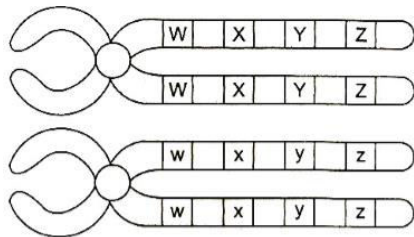
 $TT \times Tt$ 


- a) A-tt, B-TT, C-TT, D-TT                      b) A-Tt, B-Tt, C-Tt, D-Tt
- c) A-TT, B-TT, C-Tt, D-TT                      d) A-Tt, B-Tt, C-Tt, D-TT
3. When a cross is conducted between black feathered hen and a white feathered cock, blue feathered fowls are formed. When these fowls are allowed for interbreeding, in  $F_2$  - generation, there are 20 blue fowls. What would be the number of black and white fowls?
- a) Black 20, white 10    b) Black 20, white 20    c) Black 10, white 10    d) Black 10, white 20
4. Chromosomes are made up of
- a) DNA and protein                      b) RNA and DNA                      c) DNA and histone                      d) Only histones
5. In pedigree analysis, the square, blackened and horizontal lines represents
- a) Female, healthy individual, parents                      b) Female, affected individual, parents
- c) Male, affected individual, parents                      d) Male, affected individual, progeny
6. Following pedigree chart shows



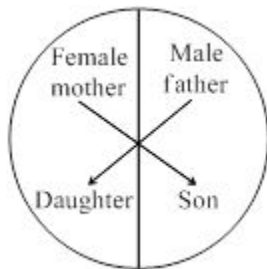
- a) Character is carried by Y-chromosome                      b) Character is sex-linked recessive
- c) Character is sex-linked dominant                      d) Character is recessive autosomal

7. Mr. Sidd is suffering from hypertrichosis and phenylketonuria. His father is heterozygous for phenylketonuria. The probability of Sidd's sperm having one recessive autosomal allele and holandric gene is
- a)  $\frac{1}{2}$                       b)  $\frac{1}{8}$                       c)  $\frac{1}{10}$                       d)  $\frac{1}{4}$
8. F<sub>3</sub>-generation is obtained by
- a) Selfing of F<sub>1</sub>                      b) Selfing of F<sub>2</sub>                      c) Crossing of F<sub>1</sub> and F<sub>2</sub> d) None of these
9. In which one of the following, complementary gene interaction ratio of 9 : 7 is observed?
- a) Fruit shape in Shepherd's purse                      b) Coat colour in mouse  
c) Feather colour in fowl                      d) Flower colour in pea
10. Starch synthesis gene in pea plant is the example of
- a) Single gene produce more than one effects  
b) Multiple genes produce more than one effects  
c) Two genes produce more than one effects  
d) Multiple genes produce less than one effects
11. In *Drosophila*, the sex is determined by
- a) The ratio of pairs of X-chromosomes to the pairs of autosomes  
b) Whether the egg is fertilized or develops parthenogenetically  
c) The ratio of number of X-chromosomes to the set of autosomes  
d) X and Y-chromosomes
12. The 1 : 2 : 1 ratio with the pink flower in the F<sub>2</sub>-generation indicate the phenomenon of
- a) Dominance                      b) Codominance  
c) Incomplete dominance                      d) Segregation
13. Sexual reproduction leads to
- a) Genetic recombination                      b) Polyploidy  
c) Aneuploidy                      d) Euploidy
14. Husband has blood group-A and wife has blood group-B. What is the blood group of children?
- a) A                      b) B                      c) AB                      d) A, B, AB and O
15. Study the following figure and find out the most probable position at which the crossing over takes place



- a) w and W                      b) X and y                      c) y and Z                      d) w and z

16. Given diagram shows certain type of traits in human. Which one of the following option could be an example of this pattern?



- a) Haemophilia                      b) Anaemia                      c) Phenylketonuria                      d) Thalassemia

17. In case of incomplete dominance, what will be the phenotypic ratio of  $F_2$  generation?

- a) 3 : 1                      b) 1 : 2 : 1                      c) 1 : 1 : 1 : 1                      d) 2 : 2

18. Haemophilia, a X-linked recessive disease is caused due to deficiency of

- a) Blood plasma and vitamin-K                      b) Blood platelets and haemoglobin  
c) Lack of clotting material and vitamin-K                      d) All of the above

19. All of this obeys Mendel's laws except

- a) Codominance                      b) Independent assortment  
c) Dominance                      d) Purity of gametes

20. in  $\beta$ -thalassaemia, the affected chromosome is

- a) 16th                      b) 14th                      c) 13th                      d) 19th