

DPP

DAILY PRACTICE PROBLEMS

Class : XIIth

Date :

Subject : BIOLOGY

DPP No. : 5

Topic :- Principles Of Inheritance & Variation

1. Chromosomal abbreviation commonly found in the
 - a) Cancer cells
 - b) Normal cells
 - c) Healthy cells
 - d) Autosomal cells

2. In short horned cattle, genes for red (R) and white (r) coat colour occur. Cross between red (RR) and white (rr) produced (Rr) roan. This is an example of
 - a) Incomplete dominance
 - b) Codominance
 - c) Complementary genes
 - d) Epistasis

3. Female is haemophilic definitely if
 - a) Mother is carrier
 - b) Father is carrier
 - c) Father is affected
 - d) Both mother and father affected

4. Polyploidy leads to rapid formation of new species because of
 - a) Isolation
 - b) Development of multiple sets of chromosomes
 - c) Mutation
 - d) Genetic recombination

5. Law of segregation is also called law of
 - a) Probability
 - b) Purity of gametes
 - c) Independence of gametes
 - d) Punnett hypothesis

6. Test cross is a cross between
 - a) Hybrid × Dominant parent
 - b) Hybrid × Recessive parent
 - c) Hybrid × Hybrid parent
 - d) Two distantly related species

7. XX and XY chromosomal sex determination, females are
 - a) Homogametic
 - b) Heterogametic
 - c) Can not determine
 - d) All of the above

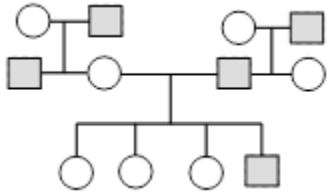
8. Heterogametic male condition does not occur in
 - a) Birds
 - b) Humans
 - c) *Drosophila*
 - d) Honey bee

9. In a typical Mendelian cross which is a dihybrid cross, one parent is homozygous for both dominant traits and another parent is homozygous for both recessive traits. In the F_2 generation, both parental combinations and recombinations appear. The phenotypic ratio of parental combinations to

- recombinations, is
- a) 10:6 b) 12:4 c) 9:7 d) 15:1
10. The genotype of a plant showing the dominant phenotype can be
- a) Test cross b) Dihybrid cross c) Pedigree analysis d) Back cross
11. If a man who is colourblind marries a woman, who is pure normal for colour vision, the chances of their sons have colour blindness is
- a) 100% b) 50:50 c) 0% d) 75 : 25
12. When a tall pea plant (TT) is crossed with dwarf plant (tt) what will be the F₂-generation?
- a) All tall plants b) All dwarf plants
c) Both tall and dwarf plants in 1 : 1 ratio d) Both tall and dwarf plants in 3 : 1 ratio
13. Broadly the genetic disorders may be classified in ...A... group Mendelian disorder and ...B... disorders. Mendelian disorder are mainly determined by ...C... in single gene. Choose the correct option for A, B and C
- a) A-two, B-chromosomal, C-genetic b) A-two, B-chromosomal, C-inversion
c) A-two, B-chromosomal, C-alteration d) A-three, B-chromosomal, C-deficiency
14. ...A... individual show ...B... phenotype but they are the ...C... of the disease as there is 50% probability of transmission of mutant gene to its progeny Choose the correct option for A, B and C
- a) A-homozygous, B-affected, C-carrier b) A-homozygous, B-unaffected, C-carrier
c) A-heterozygous, B-unaffected, C-carrier d) A-heterozygous, B-affected, C-carrier
15. If male is TT and female is tt than they contribute pollen and egg respectively with
- a) T and T gametes b) tt and TT gametes c) TT and tt gametes d) T and t gametes
16. Number of linkage group in *Pisum sativum* is
- a) 2 b) 5 c) 7 d) 9
17. In Mendel's experiments with garden pea, round seed shape (RR) was dominant over wrinkled seeds (rr), yellow cotyledon (YY) was dominant over green cotyledon (yy). What are the expected phenotypes in the F₂- generation of the cross RRYy × rryy?
- a) Only round seeds with green cotyledons b) Only wrinkled seeds with yellow cotyledons
c) Only wrinkled seeds with green cotyledons d) Round seeds with yellow cotyledons and wrinkled seeds with yellow cotyledons
18. BB = for black colour alleles
bb = for brown colour alleles
Offspring of a cross between a black mouse and brown mouse allowed to interbreed than find out the percentage of black coat in them

- a) 75%
- b) 50%
- c) Cross is not possible because black and brown mouse are different species
- d) 100%

19. Given pedigree chart indicates



- a) Autosomal recessive trait
 - b) Y-linkage trait
 - c) Autosomal dominant trait
 - d) Sex linkage recessive trait
20. The mutant haemoglobin molecule undergoes polymerization under low oxygen tension causing the change in the shape of RBC from biconcave to elongated structure. This property of RBC is found in
- a) Haemophilia
 - b) Colour blindness
 - c) Phenylketonuria
 - d) B-thalassaemia

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