WORKSHEET 2

CHAPTER 3 – HEREDITY AND GENETICS

A. Name the following.

1. Number of pairs of autosomes in humans.
2. The type of gene, which in the presence of a contrasting allele is not expressed.
3. The physical expression of genes in an individual.
4. A sudden heritable change in the gene.
5. The pair of genes responsible for a particular characteristic in an individual.

B. Fill in the blanks.

1. Upon _____, the diploid condition is restored.
2. A character that is not suppressed is _____
3. The dissimilar pair of genes present in an individual are known as _____
4. The small differences among individuals are called _____
5. The number of chromosomes in human is _____

C. State whether the following statements are True or False.

1. The plant used by Mendel was sweet pea.
2. The genetic make up of an organism is called as phenotype.
3. The chemical substance present in a gene is RNA.
4. When both the alleles are identical, they are said to be homozygous.
5. The two arms of a chromosome is called centromere.

D. Choose the correct option.

1. Who amongst following is considered as the father of genetics?
   a. Mendel b. Morgan c. Sutton d. Boveri
2. On crossing a tall plant with a dwarf plant, Mendel found the percentage of dwarf plants in F_2 generation to be
   a. 25%. b. 40%. c. 60%. d. 75%.
3. Which of these is homozygous recessive?
   a. Tt b. tt c. TT d. t
4. The dihybrid phenotypic ratio is _____
   a. 3 : 1. b. 2 : 1. c. 1 : 2 : 1. d. 9 : 3 : 3 : 1.

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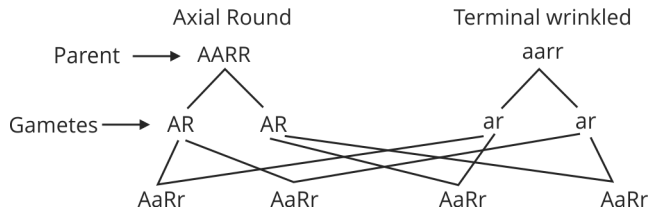
5. Which of the following is the X-linked genetic disease?

   a. Haemophilia b. Common cold c. Sickle cell disease d. Rabies

E. Given below is a schematic diagram showing Mendel's experiment on sweet pea plants having axial flower with round seeds (AARR) and terminal flowers with wrinkled seeds (aarr). Study the same and answer the questions given below.



1. Give the phenotype of F_1 progeny.
2. Give the phenotypes of F_2 progenies produced upon self-pollination of F_1 progeny.
3. Give the phenotypic ratio of F_2 progeny.
4. Name and explain the law induced by Mendel on the basis of the above observation.

ANSWERS

WORKSHEET 2

A. Name the following.

1. 22 pairs
2. Recessive gene
3. Phenotype
4. Mutation
5. Allele

B. Fill in the blanks.

1. fertilization
2. dominant
3. heterozygous
4. variations
5. 46

C. State whether the following statements are True or False.

1. True
2. False
3. False
4. True
5. False

D. Choose the correct option.

1. a.
2. d.
3. b.
4. d.
5. a.

E. Given below is a schematic diagram showing mendal's experiment on sweet pea plants having axial flower with round seeds (AARR) and terminal flowers with wrinkled seeds (aarr). Study the same and answer the questions given below.

1. Axial flowers with round seeds
2. Axial round, axial wrinkled, terminal round, terminal wrinkled
3. 9 : 3 : 3 : 1
4. Law of independent assortment – When a dihybrid organism forms gametes, each gamete receives one allele from each allelic pair and the assortment of alleles of different characteristics during gamete formation is independent of their parental combinations.