**Karan Arora**  **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **HEREDITY & EVOLUTION Max Marks : 25**

**Class = 10th Science Test CODE : A**

1. The two versions of a trait (character) which are brought in by the male and female gametes are situated on

|  |  |
| --- | --- |
| a) copies of the same chromosome | b) two different chromosomes |
| c) sex chromosomes | d) any chromosome |

1. In peas, a tall plant (Tt) is crossed with a short plant (tt). The ratio of tall plants to shorts plants in F2 is

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

1. Which among the following is a dominant trait studied by Mendel in a pea plant ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) white flower | b) terminal flower | c) Green pod colour | d) Green seed colour |

1. Mendel worked out the basic rules of inheritance of traits by working on ………………. plant .
2. Human beings have ………………. pairs of autosomes and ……………… pairs of sex chromosomes.
3. Mendel studied …………………….. pairs of ……………………….. traits in garden pea to establish rules of inheritance of traits.
4. The phenotypic ratio observed in crosses between tall and dwarf varieties in F2 generation were …………….. .
5. The traits which get expressed in F1 generation are …………………. traits.
6. What is a gene ? [ 1 ]
7. How is the sex of a new born determined in humans ? [ 2 ]
8. Why do all the gametes formed in human females have an ‘X’ chromosome ? [ 2 ]
9. State any two properties due to which Mendel selected pea plant. [ 2 ]
10. Shikha conducted an experiment to study trait inheritance and expression for several generation. She crossed a blue colour flower plant denoted by BB with that of white colour flower plant denoted by bb. [ 3 ]
11. State the colour of flower she would expect in their F1 generation plants.
12. What must be the percentage of white flower plants in F2 generation if flower of F1 plants were self pollinated?
13. State the expected ratio of the genotypes BB and Bb in the F2 progeny.
14. List three distinguishing features, in tabular form, between acquired traits and the inherited traits. [ 3 ]
15. **Column I Column II**  [ 4 ]

**(Character of garden pea plant) Contrasting Traits (Dominant/Recessive)**

|  |  |
| --- | --- |
| (A) Plant height | (p) Inflated/Constricted |
| (B) Shape of Pod | (q) Tall/Dwarf |
| (C) Shape of seed | (r) Axial/Terminal |
| (D) Position of flower on the stem | (s) Round/wrinkled |

**Tarun Arora**  **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **HEREDITY & EVOLUTION Max Marks : 25**

**Class = 10th Science Test CODE : B**

1. In peas, a tall plant (Tt) is crossed with a short plant (tt). The ratio of tall plants to shorts plants in F2 is

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

1. Which among the following is a dominant trait studied by Mendel in a pea plant ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) white flower | b) terminal flower | c) Green pod colour | d) Green seed colour |

1. The two versions of a trait (character) which are brought in by the male and female gametes are situated on

|  |  |
| --- | --- |
| a) copies of the same chromosome | b) two different chromosomes |
| c) sex chromosomes | d) any chromosome |

1. Mendel studied …………………….. pairs of ……………………….. traits in garden pea to establish rules of inheritance of traits.
2. Mendel worked out the basic rules of inheritance of traits by working on ………………. plant .
3. The traits which get expressed in F1 generation are …………………. traits.
4. The phenotypic ratio observed in crosses between tall and dwarf varieties in F2 generation were …………….. .
5. Human beings have ………………. pairs of autosomes and ……………… pairs of sex chromosomes.
6. What is a gene ? [ 1 ]
7. State any two properties due to which Mendel selected pea plant. [ 2 ]
8. How is the sex of a new born determined in humans ? [ 2 ]
9. Why do all the gametes formed in human females have an ‘X’ chromosome ? [ 2 ]
10. List three distinguishing features, in tabular form, between acquired traits and the inherited traits. [ 3 ]
11. Shikha conducted an experiment to study trait inheritance and expression for several generation. She crossed a blue colour flower plant denoted by BB with that of white colour flower plant denoted by bb. [ 3 ]
12. State the colour of flower she would expect in their F1 generation plants.
13. What must be the percentage of white flower plants in F2 generation if flower of F1 plants were self pollinated?
14. State the expected ratio of the genotypes BB and Bb in the F2 progeny.
15. **Column I Column II**  [ 4 ]

**(Character of garden pea plant) Contrasting Traits (Dominant/Recessive)**

|  |  |
| --- | --- |
| (A) Plant height | (p) Inflated/Constricted |
| (B) Position of flower on the stem | (q) Tall/Dwarf |
| (C) Shape of pod | (r) Axial/Terminal |
| (D) Shape of seed | (s) Round/wrinkled |