**Neha Malhotra**  **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **Class = 12th Biology Test**  **Max Marks : 25**

**PRINCIPLES OF INHERITANCE & VARIATION**

**[Monohybrid Cross]**

1. Multiple choice questions : [ 1 X 5 = 5]
2. A pea plant with genotype TTRrYy will produce gametes of how many types :

|  |  |  |  |
| --- | --- | --- | --- |
| a) eight | b) six | c) three | d) four |

1. An organism with two identical alleles is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Dominant | b) Hybrid | c) heterozygous | d) homozygous |

1. The term gene was introduced by :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mendel | b) Johannsen | c) Morgan | d) Bateson |

1. Genes regulating many phenotypic characters are called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Complementary gene | b) polygenic trait | c) pleiotropic gene | d) Multiple allele |

1. Two plants one with black flower and other with white coloured flower were crossed in an experiment. In the next generation grey coloured flowers were obtained. The reason for the result is :

|  |  |
| --- | --- |
| a) incomplete dominance | b) Pseudo dominance |
| c) Co dominance | d) None of these |

1. Mention two contrasting traits with respect to seeds in pea plant that were studied by Mendel? [ 1 ]
2. Define gene. [ 1 ]
3. Define alleles. [ 1 ]
4. A garden pea plant produced axial white flowers. Another of the same species produced wrinkled yellow seeds. Identify the dominant traits. [ 1 ]
5. State law of segregation of monohybrid cross. [ 2 ]
6. Mention the advantages of selecting pea plant for experiment by Mendel. [ 2 ]
7. When does a geneticist need to carry a test cross? How is it carried? [ 2 ]
8. Explain Pleiotropy with the help of an example. [ 2 ]
9. A man with blood group ‘A’ married a woman with ‘B’ group. They have a son with ‘AB’ blood group and daughter with blood group ‘O’. Work out the cross and show the probability of such inheritance. [ 2 ]
10. (a) Explain the phenomenon of dominance , multiple allelism and co-dominance taking ABO blood group as an example. [ 3 ]

(b) What is the phenotype of the following : (i) ii (ii) IAi

1. When a snapdragon plant earing pink colour flower was selfed, it was found that ; 69 plants were having red coloured flowers. What would be the number of plants bearing pink flowers and white flower? Show with the help of Punnett square. Identify the principle of inheritance involved in this experiment. [ 3 ]