

**B.Sc. BIOTECHNOLOGY  
SECOND SEMESTER  
GENETICS  
BBT-202**

**SET  
B**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

**(Objective)**

Marks: 10

*Choose the correct answer from the following:*

*1×10=10*

1. This is why Mendel failed to notice the linking phenomenon in his experiments:
  - a. He solely researched pure plants
  - b. He lacked a strong microscope
  - c. The characters he looked at were on different chromosomes
  - d. A large number of chromosomes to manage
2. Men with color blindness inherited the genes for it from:
  - a. Their mother
  - b. Their father
  - c. Either their mother and father
  - d. None
3. The trait expressed in F1 generation is:
  - a. Parental
  - b. Recessive
  - c. Dominant
  - d. Recombinant
4. This statement describes the Hardy-Weinberg law the best:
  - a. It is impossible to predict expected allele frequencies mathematically
  - b. In large populations, dominant alleles become more prevalent
  - c. Allele frequency changes over a period of time in a large population
  - d. Mechanism of inheritance in a large population does not change allele frequency
5. A condition in which two alleles for a given gene are similar to each other is known as:
  - a. Heterozygous
  - b. Recessive
  - c. Homozygous
  - d. Dominant
6. The cross between a dominant individual and a recessive individual to know the genotype of a dominant individual is known as:
  - a. Back cross
  - b. Test cross
  - c. Both
  - d. None
7. The alternate form of a gene is called as:
  - a. Recessive character
  - b. Dominant character
  - c. Alleles
  - d. Alternative gene
8. Which among the following was not explained by the Mendel's law of dominance?
  - a. Characters are controlled by discrete units called factors
  - b. Factors occur in pairs
  - c. Every factor has alternate forms known as alleles
  - d. In a dissimilar pair of factors one member of the pair dominates over the other

9. The innate tendency of the offspring to resemble their parents is called:
- a. Variation
  - b. Inheritance
  - c. Hereditary
  - d. Resemblance
10. Mendel's findings were rediscovered by:
- a. Correns
  - b. De Vries
  - c. Tschermak
  - d. All

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**( Descriptive )**

Time : 1 hr. 15 mins.

Marks : 25

[ Answer question no.1 & any two (2) from the rest ]

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|--------------------------------------------------------------------------------------------------------------------------|--------|
| 1. What do you mean by alleles? Explain in terms of recessive epistasis.                                                 | 5      |
| 2. Explain the terminology:<br>Back cross, Codominance, Pleiotrophy, Test cross, lethal genes                            | 2×5=10 |
| 3. a) How Law of Independent assortment differs from Law of Segregation?<br>b) Explain Law of Dominance with an example. | 6+4=10 |
| 4. a) What is population genetics?<br>b) Explain Hardy Weinberg equilibrium and describe the equation.                   | 5+5=10 |
| 5. Explain Pedigree analysis. Explain the phenomenon of Y-linked inheritance with suitable example.                      | 3+7=10 |

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