

**B.Sc. BIOTECHNOLOGY
SECOND SEMESTER (REPEAT)
GENETICS
BBT-202**

**SET
A**

[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

- This is why Mendel failed to notice the linking phenomenon in his experiments:
 - He solely researched pure plants
 - He lacked a strong microscope
 - The characters he looked at were on different chromosomes
 - A large number of chromosomes to manage
- Men with color blindness inherited the genes for it from:
 - Their mother
 - Their father
 - Either their mother and father
 - None
- The trait expressed in F1 generation is:
 - Parental
 - Recessive
 - Dominant
 - Recombinant
- This statement describes the Hardy-Weinberg law the best:
 - It is impossible to predict expected allele frequencies mathematically
 - In large populations, dominant alleles become more prevalent
 - Allele frequency changes over a period of time in a large population
 - Mechanism of inheritance in a large population does not change allele frequency
- A condition in which two alleles for a given gene are similar to each other is known as:
 - Heterozygous
 - Recessive
 - Homozygous
 - Dominant
- The cross between a dominant individual and a recessive individual to know the genotype of a dominant individual is known as:
 - Back cross
 - Test cross
 - Both
 - None
- The alternate form of a gene is called as:
 - Recessive character
 - Dominant character
 - Alleles
 - Alternative gene
- Which among the following was not explained by the Mendel's law of dominance?
 - Characters are controlled by discrete units called factors
 - Factors occur in pairs
 - Every factor has alternate forms known as alleles
 - In a dissimilar pair of factors one member of the pair dominate 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. a) What is population genetics?
b) Explain Hardy Weinberg equilibrium and describe the equation. | 5+5=10 |
| 3. a) How Law of Independent assortment differs from Law of Segregation?
b) Explain Law of Dominance with an example. | 6+4=10 |
| 4. Explain Pedigree analysis. Explain the phenomenon of Y-linked inheritance with suitable example. | 3+7=10 |
| 5. Explain the terminology:
a) Back cross
b) Codominance
c) Pleiotrophy
d) Test cross
e) Lethal genes | 2×5=10 |

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