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**SUBJECT CODE NO:- B-2056**  
**FACULTY OF SCIENCE & TECHNOLOGY**  
**B.Sc. T.Y. (Sem-VI)**  
**Examination November/December- 2022**  
**Botany Paper- XIX**  
**(Genetics and Biotechnology)**

[Time: 1:30 Hours]

[Max. Marks:50]

Please check whether you have got the right question paper.

- N.B
- 1) Attempt all questions
  - 2) Draw neat and well-labelled diagrams wherever necessary.
- Q.1 Describe mendelian principles with reference to the law of dominance and law of segregation. 20
- OR
- Describe sex linked inheritance. Explain in detail colour blindness and hemophilia in man. 20
- Q.2 Describe concept of genetic engineering and recombinant DNA technology. 20
- OR
- Write short notes on any four. 20
- a) Sex determination in grasshopper.
  - b) Lethal gene.
  - c) Amniocentesis
  - d) plasmids
  - e) Fine structure of gene
  - f) Blood group inheritance.
- Q.3 Multiple choice questions. 10
1. In a gene interaction the gene that masks the expressiory of another gene is termed as -----  
 a) hypostatic    b) Epistatic gene    c) Both a and b    d) None of these.
  2. Genic balance theory of sex determination was given by -----  
 a) bridge    b) Morgan    c) Mendel    d) Darwin

3. Visible character in organism are called-----  
a) genotype    b) phenotype    c) both a and b    d) none of these
4. Which these is a heterozygous conditions.  
a) RR    b) Rr    c) rr    d) None of these
5. Hypertrichosis is expressed in -----only.  
a) males    b) female    c) both a & b    d) none of these
6. -----is related with the structure of gene.  
a) Mendel    b) Darwin    c) Seymour Benzes    d) all of these
7. Detection of genetic disorders at early stages called-----  
a) ECG    b) Amnio centesis    c) Elisa    d) all of these
8. Eco R<sub>1</sub> -----restriction endonucleases.  
a) Type I    b) Type II    c) Type III    d) none of these
9. Plasmids replicates -----  
a) autonomously    b) with DNA    c) Dependently    d) None of these
10. The enzymes that cuts specifically recognition sites in the DNA is known as -----  
a) Ligase    b) Endonucleases    c) DNA polymerase    d) All of these