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**SUBJECT CODE NO:- 2056**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. T.Y (Sem-VI)**  
**Examination March/April-2022 (To Be Held In June/July-2022)**  
**Botany Paper- XIX**  
**(Genetics and Biotechnology)**

[Time: 1.53 Hours]

[Max. Marks:50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all questions
  - ii) Draw neat and well – labeled diagrams wherever necessary
- Q.1 What is gene interaction? Explain in details incomplete dominance & co- dominance with suitable examples. 20
- OR
- Define sex- linked inheritance? Explain holandric gene and haemophilia in man 20
- Q.2 What is restriction endonucleases. Explain in detail their properties and uses. 20
- OR
- Short notes ( any four ) 20
- a) Sex determination in man
  - b) Test cross
  - c) Isolation of gene
  - d) Amniocentesis
  - e) Phenylketonuria
  - f) Bt- cotton
- Q.3 Multiple choice questions 10
- 1) Law of segregation is also called as -----
    - a) Law of Dominance
    - b) Test cross
    - c) Law of purity of gametes
    - d) Back cross
  - 2) Interaction of genes was proposed by
    - a) Morgan
    - b) Bateson & Punnett
    - c) Mendel
    - d) Castle
  - 3) In co- dominance, when red cattle (RR) are crossed with white cattle (rr) the F1 hybrids have -----coloured skin
    - a) Red
    - b) white
    - c) Roan
    - d) Pink
  - 4) Who is the father of genetics

- a) Mendel                      b) Bateson & Punnett                      c) castle                      d) Morgan
- 5) The recessive characters will be expressed in ---- generation  
a) F<sub>1</sub>                      b) F<sub>2</sub>                      c) Both a & b                      d) None of these
- 6) Hypertrichosis is expressed in  
a) Males only                      b) Females only                      c) Both male & female                      d) None of these
- 7) Father of genetic engineering is.....  
a) W. Arber                      b) A. Jeffery                      c) Paul Berg                      d) Smith
- 8) Which of the following is ratio of dominant epistasis  
a) 9:7                      b) 9:3:4                      c) 12:3:1                      d) 15:1
- 9) Which of the following is the mechanism of sex determination in Drosophila.  
a) XX-XY                      b) XY-XY                      c) XX – XO                      d) ZZ- ZW
- 10) Which of the following genetically modified vegetable crop is ready for commercialization in India –  
a) Cucumber                      b) Chilly                      c) Brinjal                      d) None of these