



K24U 0016

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree (C.B.C.S.S. – OBE – Regular/Supplementary/  
Improvement) Examination, April 2024  
(2019 to 2021 Admissions)

**CORE COURSE IN BOTANY/PLANT SCIENCE**  
**6B11BOT/PLS : Genetics, Molecular Biology and Plant Breeding**

Time : 3 Hours

Max. Marks : 40

*Instruction : Draw diagrams wherever necessary.*

## SECTION – A

(Objective Type Questions)

Answer all :

- Nazis tried to justify their treatment towards Jews on the basis of
  - Eugenics
  - Euthenics
  - Euphenics
  - None of the above
- Incomplete dominance leads to modification of phenotypic ratio of F<sub>2</sub> to
  - 3 : 1
  - 2 : 1
  - 1 : 2 : 1
  - 1 : 1
- Turner syndrome is due to
  - Monosomy
  - Trisomy
  - Nullisomy
  - Double trisomy
- Codon occurs in
  - DNA
  - mRNA
  - tRNA
  - rRNA

(4×1= 4)

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## SECTION – B

(Short Essay Questions)

Answer any eight :

- What are pleotropic genes ? Give examples.
- Distinguish between incomplete dominance and codominance with examples.
- What is meant by X-linked inheritance ? Give an example.
- Explain interference and coefficient of coincidence in mapping of chromosomes.
- Distinguish between transition and transversion.
- If a trihybrid test cross leads to formation of more parental types than recombinants, what could be the reason ? Explain the phenomenon.
- Mention two objectives of plant breeding.
- Explain the term plant introduction with an example.
- Explain Chargaff's rule.
- Lac operon is an inducible operon. Why?
- What are tumour suppressor genes ?
- What are plant quarantine measures ?

(8×2=16)

## SECTION – C

(Essay Questions)

Answer any four :

- Give an account on back cross, test cross and reciprocal cross.
- Mention the outcomes from human genome project.



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- Give an account on DNA repair mechanisms.
- Elaborate on the genic balance theory of sex determination.
- Give an account on polyploidy breeding.
- Elucidate on pest resistance in plant breeding.

(4×3=12)

## SECTION – D

(Long Essay Questions)

Answer any one :

- Give an account on the different types of chromosomal mutations with illustrations.
- Explain the mechanism of DNA replication with proper illustration.
- Explain the steps involved and mechanism of protein synthesis.

(1×8=8)