



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination - January 2021
V Semester

Class : III UG
Major : Botany

Time : 3 Hours
Max. Marks : 100

18BBOC13 Genetics

PART A
Choose the Correct Answer

10 x 1 = 10

- Which of the following two traits is characteristic of a single gene
 - Seed colour and shape
 - Flower colour and position
 - Flower colour and seed coat
 - height and colour of seed
- Genotype of dominant plant can be determined by
 - Pedigree analysis
 - Back cross
 - Test cross
 - Dihybrid cross
- If both genotype and phenotype shows the same ratio of 1:2:1 in the F₂ generation it shows,
 - Incomplete dominance in monohybrid cross
 - Complete dominance in monohybrid cross
 - Dihybrid cross
 - Co-dominance
- When the activity of one gene is suppressed by the activity of a non allelic gene it is known as,
 - Pseudo dominance
 - Hypostasis
 - Epistasis
 - Incomplete dominance
- Damage and errors in DNA cause
 - Mutation
 - DNA repair
 - Translation
 - Transcription
- Addition or deletion of bases causes which kind of mutation
 - Transversion
 - Frame shift mutation
 - Transition
 - Transcription
- Euploidy is a chromosomal variation in
 - Size
 - Position of genes
 - Number
 - Structure
- Which of the following will be sterile
 - Tetraploid
 - Triploid
 - Diploid
 - Monoploid
- A codon contains how many nucleotides?
 - 1
 - 2
 - 3
 - 4
- Which position of a codon is said to be Wobble?
 - 1st
 - 2nd
 - 3rd
 - 4th

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Explain monohybrid cross.
(or)
11.b. Write the Mendel laws.
- 12.a. Discuss about lethal factor.
(or)
12.b. What is duplicate factor? Explain.
- 13.a. List out the factors inducing mutation.
(or)
13.b. Define mutagens. Write its types.
- 14.a. Give an account on significance of polyploidy.
(or)
14.b. How will you induce polyploidy artificially?
- 15.a. Define i. Gene ii. Codon iii. Anti-codon
(or)
15.b. Describe the modern concept of gene.

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. What is dihybrid cross? Explain.
(or)
16.b. Explain about trihybrid cross.
- 17.a. Discuss about incomplete dominance and pleiotropic effect.
(or)
17.b. Describe about complimentary and supplementary factors.
- 18.a. Write an essay on sex determination in plants.
(or)
18.b. Define mutation. Elaborate its types.
- 19.a. Give an account on aneuploidy.
(or)
19.b. Discuss about euploidy.
- 20.a. Give a detailed account on codon.
(or)
20.b. Write about degeneracy and identification of genetic material.
