

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2025
(Fourth Semester)
Branch - BOTANY
GENETICS AND PLANT BREEDING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Mendel took _____ contrasting characteristics of pea plants. a) eight b) seven c) six d) five	K1	CO1
	2	Mendel did not give _____. a) Concept of genes b) Concept of inheritance c) Concept of dominance d) Concept of chromosomes	K2	CO1
2	3	Euploidy is a chromosomal variation in _____. a) Size b) Position of genes c) Number d) Structure	K1	CO2
	4	Repulsion and coupling are two faces of _____. a) mutation b) chiasmata c) linkage d) crossing over	K2	CO2
3	5	Which of the following is also known as the removal of one or more bases from the nucleotide chain? a) Deletion b) Insertion c) Transition d) Transversion	K1	CO3
	6	Intercalary aberrations are a part of _____. a) Deletion b) Addition c) Inversion d) Translocation	K2	CO3
4	7	Pureline selection is always based on _____. a) Genotype b) Phenotype c) Progeny test d) Heritability	K1	CO4
	8	Which of the following processes is not related to hybridisation? a) Emasculation b) Selection of parents c) Bagging d) Crossing or artificial pollination	K2	CO4
5	9	Which of the following wheat variety was used as a donor for improving cultivated wheat? a) Atlas 66 b) Atlanta 68 c) Atlas 77 d) Atlanta 90	K1	CO5
	10	Which of the following is not a High Yielding Variety of wheat? a) Jaya b) Ratna c) Sonalika d) Jowar	K2	CO5

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the Epistasis. and its types.	K2	CO1
		(OR)		
	11.b.	Summarize the monohybrid cross.		
2	12.a.	List out the tetrad analysis.	K4	CO2
		(OR)		
	12.b.	Discover the mechanism of crossing over.		

Cont...

3	13.a.	Examine the cytoplasmic male sterility in Maize.	K4	CO3
	(OR)			
	13.b.	Inspect the plastids inheritance in <i>Mirabilis</i> .		
4	14.a.	Discuss the procedure for plant introduction.	K6	CO4
	(OR)			
	14.b.	Invent the steps involved in plant acclimatization.		
5	15.a.	Explain the genetic improvement of Sugarcane.	K4	CO5
	(OR)			
	15.b.	Simplify wheat genetically improved?		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss in detail about the complementary factors.	K6	CO1
2	17	Explain the characteristics of multiple alleles with suitable examples.	K5	CO2
3	18	Discover the causes, mechanism and types of chromosomal mutation.	K4	CO3
4	19	Inspect the steps involved in mass selection.	K4	CO4
5	20	Explain the genetic improvement of paddy.	K5	CO5

Z-Z-Z

END