PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2023

(First Semester)

Branch - BOTANY

PLANT GENETICS AND BREEDING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry **EQUAL** marks $(10 \times 1 = 10)$

Question No.	Question	K Level	СО
1	The tendency of offspring to differ from parents is called a) variation b) heredity c) inheritance d) resembalance	K1	CO1
2	If the genotype consists of only one type of allele. It is called a) homozygous b)heterozygous c) momoallelic d) uniallelic	K2	CO1
3	The kernel color of wheat is determined by gene. a) One b) Two c) Three d) Five	K1	CO2
4	Skin colour inheritance in man is a) Monogeneic b) Polygenic c) Sex linked d) Multiple alleles	K2	CO2
5	Episome is a a) Plasmid b) Part of a chromosome c) Lysosome d) Ribosome	K1	CO3
6	Genes which are present in the homologous region of X and Y chromosomes are called a) Autosomal b) Sex linked c) Partially sex linked d) Unlinked	K2	CO3
7	A method of breeding most commonly used when the desired variation is required to be induced in a vegetatively propagated crop is a) Polyploidy b) Pedigree method of breeding c) Mutation breeding d) Backcross method of breeding	K1	CO4
8	The desired varieties of economically useful crops are raised by a) Vernalization b) Mutation c) Natural selection d) Hybridization	K2	CO4
9	Which of the following would cause deviation from the Hardy-Weinberg equilibrium? a) small population b) isolated c) random mating d) lack of selection pressure	K1	CO5
10	Aims of plant breeding are to produce a) Disease-free varieties b) High-yielding varieties c) Early-maturing varieties d) all of the above	K2	CO5

Cont...

22BOP104N/22BOP104

Cont...

SECTION - B (35 Marks) Answer ALL questions

ALL questions carry EQUAL Marks $(5 \times 7 = 35)$

Question No.	Question	K Level	со
11.a.	Examine the non-mendelian inheritance.		
(OR)		K4	CO1
11.b.	Discover the characteristics of multiple alleles.		
12.a.	What is crossing over? Discover its significance.		CO2
	(OR)	K4	
12.b.	Infer the procedure for chromosome mapping.		
13.a.	Define chromosomal aberrations. Explain its types.		
	(OR) K5		CO3
13.b.	Interpret the types of Polyploidy.		
14.a.	Criticize the procedure for plant introduction.		ME LINE
(OR)		K5	CO4
14.b.	Evaluate the objectives of plant breeding.		
15.a.	Discuss the steps for estimation of gene frequencies in a population.	- K6	CO5
(OR)		NO.	003
15.b.	Elaborate on the principles of Hardy – Weinberg law.		

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

 $(3 \times 10 = 30)$

Question No.	Question	K Level	СО
16	Analyze the Dihybrid cross with suitable example.	K4	CO1
17	Interpret the Polygenic inheritance in wheat kernel colour.	K5	CO2
18	Analyze the Plastids inheritance in plants.	K4	CO3
19	Criticize about mass selection.	K5	CO4
20	Discuss in detail about Plant breeders rights and farmer rights.	K6	CO5

Z-Z-Z END