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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2022 ONLY)

22PBY207

REG. NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY-2023

COURSE NAME: M.Sc.-BOTANY **MAXIMUM MARKS: 50**

SEMESTER: II **TIME : 3 HOURS**

CYTOLOGY GENETICS AND PLANT BREEDING

SECTION – A (10 X 1 = 10 Marks)

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS. K1

1. Who discovered the term mitochondria?
   a) Benda b) Kolliker c) Nagal d) Sinnot

2. When dominant and recessive alleles express itself together it is called?
   a) codominance b) dominance c) psedodominance d) amphidominance

3. Gene mutation occurs at the time of_____.
   a) DNA Repair b) DNA Replication c) Cell division d) RNA trascription

4. Recall the term pure line was suggested first time by_____.
   a) W.L.Johanssen b) Darlington c) Dobzhansty d) Sinnot

5. The cross which is made between two different species of the same genus _____.
   a) Intervarietal hybridization b) intra varietal hybridization
   c) inter specific or intra generic hybridization d) inter generic hybridization

ANSWER THE FOLLOWING IN ONE OR TWO SENTENCES. K2

6. Lysosomes.
7. Homologous chromosomes.
8. Triplet codon.
9. Double haploid.
10. Germplasm.

SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (A) OR (B) IN EACH OF THE FOLLOWING QUESTIONS. K3

11.a) Write the chemical composition of cell wall.

(OR)

b) Explain briefly the structure of chromosome.

12.a) Illustrate the sex determination in plants.

(OR)

b) Describe how you will construct genetic map.

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13.a) List the chemical mutagens and their causes.

(OR)

b) Mention the characteristics of genetic code.

14.a) What are the objectives of plant breeding?

(OR)

b) Discuss the pedigree methods of crop improvements.

15.a) Describe the inter varietal hybridization techniques.

(OR)

b) Write about the national and international organization of crop improvements.

SECTION – C (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. K4 & K5

16.a) Analyze the structure and functions of mitochondria.

(OR)

b) Construct the steps involved in mitosis.

17.a) Explain the Mendelian inheritance in detail.

(OR)

b) Discuss the linkage and crossing over.

18. a) Classify the mutation and their effects with suitable example.

(OR)

b) Justify the DNA as genetic material.

19. a) Discuss the methods of polyploidy production.

(OR)

b) Write an essay on selection procedures adapted for crop improvements**.**

20. a) Discuss heterosis and hybrid vigour in detail.

(OR)

b) Mention the role of IBPGR and NBPGR.

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