

BOT-128
GOVERNMENT COLLEGE (AUTONOMOUS), RAJAMAHENDRAVARAM
III year B.Sc., Program Examinations at V Semester End
Botany Paper – 5 : Cell Biology, Genetics and Plant Breeding
(Model paper w.e.f. 2018-19)

Time: 3 Hrs.

Max. Marks: 60

Section – A

5 x 2 = 10 M

Answer All the following questions. Diagrams are not needed

1. Primary pit field
2. Nucleoside
3. Crossing over
4. Introduction
5. Mutation

Section – B

4 x 5 = 20 M

Answer any Four of the following questions. Draw diagrams wherever necessary.

6. Cell theory
7. Euchromatin and Heterochromatin
8. t-RNA
9. Characteristics of genetic code
10. Test cross
11. Complete linkage
12. Objectives of plant breeding
13. Somaclonal variations

Section – C

3 x 10 = 30 M

Answer any Three of the following questions. Draw neat and labeled diagrams wherever necessary.

14. Write an essay on the ultrastructure and functions of cell membrane.
15. Describe the Watson and Crick model of DNA.
16. Discuss the complementary and inhibitory gene interactions with suitable examples.
17. Discuss the procedure, advantages and limitations of hybridization.
18. Write an essay on the use of molecular markers in plant breeding.

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GOVERNMENT COLLEGE (AUTONOMOUS), RAJAMAHENDRAVARAM

III B.Sc., Botany Practical examinations at the end of V Semester

(Cell Biology, Genetics and Plant breeding)

Botany Practical Paper - V model (w.e.f.2018-19)

Time: 2 hours

Max. Marks: 50

1. Experiment 'A' Major experiment – Prepare a slide using squash technique and report any two important stages of mitosis in Onion root tips supplied to you.

12 M

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| Scheme of valuation: Preparation slide | 4 M |
| Report of 2 stages of mitosis | 2 M |
| Reasons and diagrams | 6 M |

2. Experiment 'B' – Solve the given Genetics problem and give the inference **10 M**

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| Scheme of valuation: Solving the problem | 7 M |
| Inference | 3 M |

3. Scientific observation and data analysis **4 x 5 = 20 M**

C. Microphotograph of a cell organelle

D. Chromosome

E. Floral biology

F. Mutation breeding/Somaclonal variation/Molecular breeding technique

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| Scheme of valuation: Identification | 1 M |
| Diagram | 1 M |
| Reasons/analysis | 3 M |

4. **Record, Viva-voce**

5 + 3 = 08 M