

**Q.P. Code : 11229**

**Second Semester B.Sc. Degree Examination, May/June 2019**

*(CBCS – 2018 onwards – Freshers only)*

**Genetics**

**Paper II – GNT 201 — PRINCIPLES OF GENETICS**

*Time : 3 Hours]*

*[Max. Marks : 70*

*Instructions to Candidates :*

- 1. Draw diagrams wherever necessary.*
- 2. Answer should be written completely in English.*

**PART – A**

- I. Answer any **FIVE** of the following : **(5 × 3 = 15)**
1. What is test cross? Give a suitable example.
  2. Give an account on preformation theory.
  3. Write about the measures of dispersion.
  4. Briefly explain incomplete inheritance.
  5. Mention the measures of central tendency.
  6. What is probability? Mention its rules.
  7. Comment on gynandromorphs.

**PART – B**

- II. Answer any **FIVE** of the following : **(5 × 5 = 25)**
8. Differentiate between genotype and phenotype.
  9. Write notes on the biography of Mendel.
  10. Explain supplementary gene interaction with reference to the grain colour in Maize.

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11. Define dominant epistasis. Explain with a suitable example.

12. Explain binomial and Poisson distribution.

13. Calculate the median from the following data :

No. of spikes per panicle :	10-25	25-40	40-55	55-70	70-85	85-100
No. of branches :	7	20	40	26	5	2

14. Explain hormonal control of sex determination with reference to free martins.

**PART - C**

III. Answer any **TWO** of the following : **(2 × 10 = 20)**

15. Explain inheritance of acquired characters and mutation theory.

16. Discuss the genetic basis of ABO blood group inheritance. Add a note on Rh factor.

17. Give an account on genetic balance theory of Bridges.

18. In a Mendalian experiment on breeding four types of plants are expected to occur in the proportion of 9 : 3 : 3 : 1. The observed frequencies are 891 round and yellow, 316 wrinkled and yellow, 209 round and green and 119 wrinkled and green. Find out the chi-square value and interpret your results.

(Table value of  $\chi^2$  at 5% level of significance is 7.80)

**PART - D**

IV. Answer any **ONE** of the following : **(1 × 10 = 10)**

19. Write notes on the following :

(a) Dihybrid cross in pea plant

(b) Coat colour in mice

20. Describe the dosage compensation in Drosophila.