

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION DECEMBER 2018  
(Fifth Semester)

Branch- ZOOLOGY

GENETICS

Time Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks!)**

Answer ALL questions

ALL questions carry EQUAL marks (10x2 = 20)

- 1 Reserve genetics.  
2 FI - Generation.  
3 Punnett square.  
4 Wiener's hypothesis.  
5 Z-linked genes.  
MR-0001 Linkage equilibrium.  
Renner complex.  
XO - female.  
Syndromes.  
10 Genetic counseling.

**SECTION - B (25 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a What are the contrasting traits in pea plant studied by the Mendel?  
OR  
b Write an account on uses of a Test cross.
- 12 a State the principle of complementation.  
OR  
b Explain about the MN - series of blood groups.
- 13 a How do you calculate linkage map distance?  
OR  
b Give an account on the characteristics of X-linked inheritance.
- 14 a Explain about the techniques used to test for hereditary defects in the fetus.  
OR  
b Give an account on sex chromatin.
- 15 a Give an account on inheritance pattern of sickle cell anaemia.  
OR  
b Mention the features of Hardy-Weinberg law applicable only to populations.

**SECTION - C (30 Marks)**

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Make a checkerboard showing 16 combinations obtained in a dihybrid cross involving characters for seed shape and seed colour.
- 17 Write an essay on alleles of Rh-factor in human beings.
- 18 Discuss about the factors affecting the crossing over.