

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION DECEMBER 2019  
(Second Semester)

Branch - BIOTECHNOLOGY

GENETICS

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks!)**

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Mendel was a \_\_\_\_\_.  
(i) Austrian Monk (ii) Austrian biology teacher  
(iii) Austrian Scientist (iv) American Scientist
- 2 The alternate form of gene is called \_\_\_\_\_.  
(i) Recessive characters (ii) Alleles  
(iii) Dominant Characters (iv) Alternative genes
- 3 The term chromosome was coined by \_\_\_\_\_.  
(i) W Rov x (ii) W.Fleming  
(iii) Waldyer (iv) Morgan
- 4 Euploidy in chromosomal variation in \_\_\_\_\_.  
(i) Size (ii) Number  
(iii) Position of genes (iv) Structure
- 5 A Cell or organism leaving more than two paired sets of chromosomes is called \_\_\_\_\_.  
(i) Polyploidy (ii) Mutation  
(iii) Aneuploidy (iv) Albinism
- 6 The pairing of completely or partially homologous chromosomes contained in the same gametes at fertilization is called  
(i) Aullosomes (ii) Autosyndesis  
(iii) Allosyndesis (iv) Autosomes
- 7 Achondroplasia is a genetic disorder that results in \_\_\_\_\_.  
(i) Gigantism (ii) Cleft lip  
(iii) Anemia (iv) dwarfism
- 8 Genetic problem caused by one or more abnormalities formed in genome is called \_\_\_\_\_.  
(i) Autoimmune disorder (ii) Genetic disorder  
(iii) Mutation (iv) Genetic Shift
- 9 Maintenance of allele frequencies at the same value in successive generation is called \_\_\_\_\_.  
(i) Genetic shift (ii) Genetic equilibrium  
(iii) Genetic variability (iv) Gene pool
- 10 A group of individuals from some geographic area and that actually or potentially interbreeds are called \_\_\_\_\_.  
(i) gentotype frequency (ii) Gene flow  
(iii) population (iv) variation

Cont...

**SECTION - B (25 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 5 = 25)

11 a Summarize multiple alleles with example.

OR

b Classify epistasis with appropriate example.

12 a Classify the types of chromosome in detail.

OR

b How does Klein syndrome occur?

13 a Narrate Anueploidy in plant with example.

OR

b Explain meiotic pairing.

14 a Narrate about multigene disorder.

OR

b Explain Neurofibrometosis in detail.

15 a Compare and contrast assortative and non-assortive mating.

OR

b How does mutation affects the population.

**SECTION -C (40 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 x 8 = 40)

16 a Discuss Mendels Second Law with neat sketch.

OR

b Elucidate Sex linked inheritance in detail.

17 a Enumerate on Pedigree charting.

OR

b Outline about Retinoblastoma syndrome and its causes.

18 a Highlight the chromosomal variation in plants.

OR

b Summarize Heterosis and genetic basis of heterosis.

19 a Classify Autosomal inheritance and highlight about recessive inheritance with an example.

OR

b Summarize X-linked recessive inheritance with example.

20 a Enumerate genetic drift with relevant example.

OR

b Summarize Natural Selection theory.