

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

Branch - **BIOTECHNOLOGY**

**CLINICAL GENETICS**

Time : Three Hours

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10 x 2 = 20)

- 1 Mendel's dihybrid ratio.
- 2 Define gene mapping.
- 3 What is polyploidy and euploidy?
- 4 What is chorionic villus sampling?
- 5 Haemophilia - genetic nature.
- 6 Give example for X linked recessive inheritance.
- 7 What is CF?
- 8 OMIM.
- 9 Hardy Weinberg law.
- 10 Define Median.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

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

- 11 a Note on genetic linkage.  
OR  
b Note on maternal inheritance with examples.
- 12 a Discuss the method of genetic screening and counseling.  
OR  
b What is amniocentesis? What are its applications.
- 13 a Explain the genetics of Thalassaemia.  
OR  
b Note on X linked dominant inheritance.
- 14 a Discuss with example autosomal recessive modes of inheritance.  
OR  
b Note on polygenic disorders with examples.
- 15 a Compare correlation and regression.  
OR  
b Calculate the mean and median and mode for the following data: 12, 13, 15, 16, 87, 76, 34, 43, 45, 65, 56.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

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

- 16 Write an elaborate account on inborn errors in metabolism.
- 17 Explain Karyotyping and Chromosome Fishing.
- 18 What is meant by Genomic imprinting?
- 19 Note on single gene inheritance in humans and importance of pedigree charting.

TO How will you calculate allele frequency?