**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)

**BSc DEGREE EXAMINATION DECEMBER 2023**
(Third Semester)

Branch – **ZOOLOGY**

**GENETICS**

Time: Three Hours Maximum: 50 Marks

**SECTION-A (5 Marks)**
Answer **ALL** questions
**ALL** questions carry **EQUAL** marks (5 x 1 = 5)

1 The tendency of an offspring to resemble its parent is known as
(i) Variation (ii) Resemblance
(iii) Heredity (iv) inheritance

2 The smallest unit of genetic material which produces a phenotypic effect on mutation is
(i) Gene (ii) Muton
(iii) Nucleic acid (iv) Recon

3 Homozygosity and heterozygosity of an individual can be determined by
(i) Test cross (ii) Back cross
(iii) Self-fertilization (iv) All of these

4 Identify a Mendelian disorder from the following
(i) Down's syndrome (ii) Klinefelter's syndrome
(iii) Turner' syndrome (iv) Phenylketouria

5 Point mutation is characterized by which of the following disorders?
(i) Thalassemia (ii) Sickle cell anaemia
(iii) Night blindness (iv) Down's syndrome

**SECTION - B (15 Marks)**
Answer **ALL** Questions
**ALL** Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a. Outline the scope and significance of genetic studies.
OR
b. Analyze the codominance.

7 a. Describe the erythroblastosis foetalis
OR
b. Explain the epistasis.

8 a. Illustrate diagrammatic representation of pedigree chart.
OR
b. Classify the crossing over of gene.

**Cont...**

9 a. State about the Barr body and its significance.

OR

b. Outline Klienfelter's syndrome and its notable reason.

10 a. Classify the Eugenics and Euthenics.

OR

b. Differentiate the Inbreeding and out breeding.

## SECTION -C (30 Marks)

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks (5 x 6 = 30)

11 a. Discuss the Law of independent assortment.

OR

b Elucidate the Incomplete dominance.

12 a. Summarize the interaction of gene.

OR

b. Identify the Polygenic inheritance.

13 a. Discuss Sex determination in man.

OR

b. Explain the Sex-linked inheritance.

14 a. Explain the chromosomal aberration.

OR

b. Explicate the Turner's syndrome.

15 a. What are Inborn errors of metabolism and explain galactosemia?

OR

b. Infer the Principle and the significance of Hardy-Weinberg law.

Z-Z-Z END