

SUBJECT: GENETICS

Day: Monday
Date: 22/10/2018

W-2018-1197

Time: 10.00 AM TO 01.00 PM
Max Marks. 80

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw Diagram **WHEREVER** necessary.
- 4) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION - I

- Q.1 a)** Answers any **ONE** of the following (06)
- i)** What are giant chromosomes? Explain the structure of lampbrush chromosome?
 - ii)** What is FISH? Write its applications.
- b)** Attempt any **TWO** of the following (10)
- i)** Explain ultra structure of chromosome with a labelled diagram.
 - ii)** What is Karyotyping? Explain its importance in prenatal diagnosis.
 - iii)** Explain the importance of genetics in Agriculture.
- Q.2** Write short notes on any **FOUR** of the following (16)
- i)** Gene interactions.
 - ii)** Law of independent assortment of alleles.
 - iii)** Maternal inheritance.
 - iv)** Multiple allelism.
 - v)** Pseudodominance.

SECTION - II

- Q.3 a)** Answers any **ONE** of the following (06)
- i)** What are jumping genes? Explain their importance in evolution.
 - ii)** Explain gene mapping in diploids with an example.
- b)** Attempt any **TWO** of the following (10)
- i)** Explain numerical chromosomal aberrations.
 - ii)** Describe different types of Gene mutations.
 - iii)** Write importance of Drosophila in genetic studies.
- Q.4** Write short notes on any **FOUR** of the following (16)
- i)** SRY gene in Y chromosomes
 - ii)** Environment dependent sex determination
 - iii)** Migration
 - iv)** Sex linked inheritance
 - v)** Molecular evolution
- Q.5** Solve all **EIGHT** questions. (16)
- i)** What is genetic counseling?
 - ii)** What is high resolution banding?
 - iii)** Define test cross.
 - iv)** State significance of infective particle?
 - v)** What is fragile X – chromosome?
 - vi)** Write the role of SNP in population studies.
 - vii)** What is dosage compensation?
 - viii)** Define mutation.