

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.

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