

**F. Y. B. Sc. (Biotechnology) SEM – II (CBCS - 2015 COURSE) :**

**SUMMER - 2019**

**Subject: Genetics**

Day: Monday

Date: 15/04/2019

**S-2019-1375**

Time: 02.00 PM TO 05.00 PM

Max. Marks: 60

**N.B.:**

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SAME answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

**SECTION - 01**

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What are nucleosomes?
- b) What is mean by diploid number?
- c) What is transmission genetics?
- d) What are recessive?
- e) What is knockout mice?
- f) What are experimental model organisms?

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) What is pedigree analysis? Write the importance of pedigree analysis.
- b) Explain the methodologies used by Mendel to derive law of segregation.

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Nomenclature of human chromosomes.
- b) Explain different steps in culturing of drosophila

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Linkage
- b) Mouse as a genomic model organism.

**SECTION - 02**

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is metafemala in drosophila?
- b) What is criss cross inheritance
- c) What is tandem duplication mutation?
- d) What is Robertsonian translocation?
- e) What are Ac element in maize?
- f) What is indel mutation?

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Write the significance of SRY gene in human male development.
- b) Explain the structure of transposable elements in bacteria.

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) Explain the inheritance of hemophilia in human.
- b) In short, describe various factors affecting genetic equilibrium.

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Speciation
- b) Natural selection

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