F. Y. B. SC. (BIOTECHNOLOGY) SEM – II (CBCS - 2015 COURSE) : SUMMER - 2018

SUBJECT: GENETICS

Day: **Friday**
Date: **13/04/2018**

Time: **02.00 PM TO 05.00 PM**
Max Marks. 60

S-2018-1049

N.B.

1) **Q. No. 1** and **Q. No. 5** are **COMPULSORY**.
2) Attempt **ANY TWO** questions from remaining three in each section.
3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION - I

Q.1 Answers any **FIVE** of the following **(10)**

a) Define Linkage
b) What is test cross?
c) Write any four characters of pea plant that Mendel used for his studies.
d) What is pedigree analysis?
e) Define speciation.
f) What are congenital diseases?

Q.2 Discuss in detail with suitable example **(10)**

a) Law of segregation of alleles
b) Y – linked inheritance

Q.3 Explain the following **(10)**

a) Dominant epistasis
b) Mitochondrial inheritance

Q.4 Write short notes on any **TWO** of the following **(10)**

a) Polytene chromosomes
b) Chromosome banding
c) RFLP

SECTION - II

Q.5 Explain the importance of following organisms in Genetics **(10)**

a) *C. elegans*
b) *E. coli*

Q.6 Answer the following **(10)**

a) Explain sex linked inheritance with an example.
b) Explain environment dependent sex determination with suitable example.

Q.7 Write short notes on **(10)**

a) Polyploidy in plants and its applications in agriculture.
b) Transposons

Q.8 Answer the following **(10)**

a) Explain different factors affecting genetic equilibrium.
b) Explain molecular evolution.

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