

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.