

# C.U.SHAH UNIVERSITY

## Summer Examination-2019

**Subject Name: Discipline Specific Elective-I (Inheritance Biology)**

**Subject Code: 4SC05INB1**

**Branch: B.Sc. (Microbiology)**

**Semester: 5**

**Date: 16/03/2019**

**Time: 10:30 To 01:30**

**Marks: 70**

**Instructions:**

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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**Q-1 Attempt the following questions: (14)**

- a) What was Mendel's first law?
- b) Name any two semi autonomous cell organelle
- c) Define crossing over
- d) Define Transposition
- e) Define Recombination
- f) Define epistasis
- g) Give an example of Incomplete dominance
- h) Define gene
- i) Define allele
- j) Define inversion of gene
- k) Name any two abnormality due to chromosomal number
- l) Define pseudo allele
- m) Define penetrance
- n) Define expressivity.

**Attempt any four questions from Q-2 to Q-8**

**Q-2 Attempt all questions (14)**

- a) Discuss chromosomal theory of inheritance (7)
- b) Compare Incomplete dominance and co dominance (7)

**Q-3 Attempt all questions (14)**

- a) Explain recessive epistasis and compare it with dominant epistasis (7)
- b) Describe chiasmata formation (7)

**Q-4 Attempt all questions (14)**

- a) Explain why Mendel choose garden pea in his experiments? (7)
- b) Discuss the importance of Mendel's laws of genetics (7)

**Q-5 Attempt all questions (14)**

- a) Discuss *E. coli* as a model organism in genetics (7)



b) *Saccharomyces cerevisiae* is an important model organism in genetics. Discuss (7)

**Q-6** **Attempt all questions** (14)

a) Define recombination. Discuss mapping by recombination. (7)

b) Discuss the chromosomal number abnormality and its symptoms in the following: (7)

a) Turner syndrome

b) Down syndrome

**Q-7** **Attempt all questions** (14)

a) Explain the structural organization of chromosomes (7)

b) What is the end replication problem of DNA? How it can be resolved? (7)

**Q-8** **Attempt all questions** (14)

a) Compare Homologous and non-homologous recombination (7)

b) Define transposition. Write a note on the uses of transposons. (7)

