

**FACULTY OF SCIENCE**

**B.Sc. IV-Semester (CBCS) Examination, May / June 2018**

**Subject: Microbiology**

**Paper – IV**

**Microbial Genetics and Molecular Biology**

**Time: 3 Hours**

**Max.Marks: 80**

**PART – A (5x4 = 20 Marks)**

**[Short Answer Type]**

**Note: Answer any five of the following questions.**

- ✓ 1 Structure of DNA ✓
- 2 Transposons
- ✓ 3 Frame shift mutations ✓
- ✓ 4 Chemical mutagens ✓
- ✓ 5 One gene one enzyme concept ✓
- ✓ 6 Types of RNA ✓
- 7 Principle of genetic engineering ✓
- 8 cDNA library

**PART – B (4x15 = 60 Marks)**

**[Essay Answer Type]**

**Note: Answer all questions from the following.**

- 9 a) Write the difference between DNA and RNA, illustrate with figures.  
**OR**  
b) Give a note on extra chromosomal genetic material.
- 10 a) Define mutations and describe different types of mutations.  
**OR**  
b) Give an outline on DNA damage and explain its repair mechanisms.
- 11 a) Describe the biosynthesis of RNA in prokaryotes.  
**OR**  
b) Give in detail the concept of Lac Operon.
- 12 a) Define genetic engineering and describe the enzymes involved in the process.  
**OR**  
b) Give an account on industrial and agriculture applications of genetic engineering.

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