

B.Sc. (With Credits)-Regular-Semester 2012 Sem IV  
**B.Sc.2461 - Microbiology Paper-I (Microbial Genetics)**

P. Pages : 2

Time : Three Hours



**GUG/S/18/5612**

Max. Marks : 50

1. Describe Lac operon model in detail. **10**

**OR**

What is mutagenic agent? Explain chemical mutagens in detail.

2. Describe transcription in prokaryotes in detail. **10**

**OR**

What is transduction? Explain generalized and specialized transduction.

3. a) Write a short note on split gene. **2½**

b) What is induced mutation? **2½**

c) Explain rolling circle model of replication. **2½**

d) What is transposable elements? **2½**

**OR**

e) Explain monocistronic and polycistronic concept. **2½**

f) What is base pair substitution? Explain. **2½**

g) Write a short note on BER. **2½**

h) Explain Griffith experiment. **2½**

4. a) Write a short note on overlapping gene. **2½**

b) Describe Ames test. **2½**

c) Write a short note on Wobble hypothesis. **2½**

d) Write a short note on complete transduction. **2½**

**OR**

e) Write a note on muton, recon & cistron. **2½**

f) Explain frame shift mutation. **2½**

- g) Write a short note on translation in prokaryotes. 2½
- h) What is conjugation? Explain the formation of F' (prime) cell. 2½

**5. Attempt any ten.**

- a) What is genome? 1
- b) Who described lac operon? 1
- c) What is the function of muton & recon? 1
- d) Name the physical agent responsible for mutation? 1
- e) What is nonsense mutation? 1
- f) What is transversion. 1
- g) What is anticodon? 1
- h) What is the role of sigma ( $\sigma$ ) factor. 1
- i) Name 1<sup>st</sup> amino acid participate in protein chain in prokaryotic organism. 1
- j) Who discovered transduction? 1
- k) What is sexduction? 1
- l) What is Hfr cell? 1

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