B.Sc. (With Credits)-Regular-Semester 2012 Sem IV

# B.Sc.2461-Microbiology-I : Paper-I (Microbial Genetics)

P. Pages : 2 **GUG/W/16/5612**

Time : Three Hours * 0 0 8 7 * Max. Marks : 50

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**1.** a) What is gene expression? Explain Central dogma of protein synthesis. **5**

b) Explain Lac operon as a gene regulation. **5**

**OR**

What is mutation? Explain molecular basis of mutation. **10**

**2.** Describe replication of DNA in prokaryotes. **10**

**OR**

What is transformation? Explain as a method of gene recombination.

**3.** a) What is gene? Explain their types. **2½**

b) What is spontaneous mutation? Explain. **2½**

c) Explain characteristics of genetic code. **2½**

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

**OR**

e) Explain gene within gene with an example. **2½**

f) Comment on mutagenic agents. **2½**

g) What is promoter gene? Explain. **2½**

h) Explain characteristics of donor and recipient in conjugation. **2½**

**4.** a) Explain simple and split gene? **2½**

b) Explain frame shift mutation? **2½**

c) Explain elongation process in transcription? **2½**

d) Explain Griffith's experiment of transformation. **2½**

**OR**

e) What is genome? Explain. **2½**

f) What is transversion mutation? explain. **2½**

g) Explain elongation in translation. **2½**

h) Give difference between transformation. and transduction. **2½**

**5.** Solve **any ten** of followings.

a) What is recon and cistron? **1**

b) Give a example of gene within gene. **1**

c) What is polycistron. **1**

d) Give unit of mutation? **1**

e) Who discovered Ames test? **1**

f) What is silent mutation? **1**

g) What are the modes of DNA replication. **1**

h) What is shine dalgarno sequence. **1**

i) What is TATA box. **1**

j) What is virulent strain. **1**

k) What is vector in transduction. **1**

l) what is $F^+$ and $F^-$ cells. **1**

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