**MCB 1000 Applied Microbiology**
**Chapter 9 Study Questions**

1. Define

| | |
|---|---|
| genetics | gene |
| chromosome | genome |
| replicon | replication |
| genotype | phenotype |
| codon | anticodon |
| nonsense codon | polyribosomal complex |
| mutation | mutagen |
| recombination | conjugation |
| transformation | transduction |
| transposon | |

2. Describe the structure of the DNA molecule.

3. Briefly describe DNA replication.

4. List the steps in protein synthesis. Explain each step and the nucleic acid structures involved.

5. Briefly explain the differences between procaryotic and eucaryotic protein synthesis.

6. Briefly describe the replication, transcription, and translation of dsDNA viruses, positive-sense single-stranded RNA viruses and retroviruses.

7. Explain genetic regulation in procaryotic cells using the lactose operon (inducible) and the arginine operon (repressible) as examples.

8. Briefly explain how antibiotics affect protein synthesis.

9. Describe causes, categories and repair of mutations.

10. Briefly describe the Ames test and its significance.

11. List and briefly describe four methods bacteria use to transfer or exchange genetic material.