

**BOWEN UNIVERSITY, IWO  
DEPARTMENT OF BIOLOGICAL SCIENCES**

**2010/2011 SECOND SEMESTER EXAMINATION**

**MCB 405: MICROBIAL GENETICS**

Answer Section A and one question each from sections B and C.

Time: 2hr 15 mins.

**SECTION A**

1. Write short notes on
- (a) Heterozygosity in microorganisms
  - (b) Competent cells
  - (c) Transposable elements
  - (d) Cloning vectors
  - (e) Non-sense mutations
- (30Marks)*

**SECTION B**

2. (a) Briefly comment on the molecular basis of mutation.  
(b) Write short notes on the major types of mutagens you know.  
*(20Marks)*
3. (a) Give a concise definitions of Genetic Engineering.  
(b) Comment briefly on the use(s) of genetic engineering in  
(i) Agriculture                      (ii) Medicine  
*(20Marks)*

**SECTION C**

4. (a) Briefly comment on the distinguishing features of the bacterial genome.  
(b) Comment on the major advantages of using microorganisms for genetic studies.  
*(20Marks)*
5. (a) Define "Conjugation" as it relates to microorganisms.  
(b) Briefly discuss the essential steps involved in Conjugation.  
*(20 Marks)*