

**National Open University of Nigeria**

**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**

**Faculty of Science**

**Department of Pure and Applied Sciences**

**APRIL/MAY, 2019 EXAMINATIONS**

**COURSE CODE: BIO307**

**COURSE TITLE: EVOLUTION**

**CREDIT: 2 Units**

**TIME ALLOWED: 2 Hours**

**INTRUCTION: Answer Question ONE (1) and any other THREE (3) Questions**

1a. Define Biological Evolution. (2 marks)

b. Enumerate the causes of spontaneous mutation. (6 marks)

1. Write short notes on the following:

i. deleterious alleles (4 marks)

ii. fate of mutant alleles (4 marks)

d. Enumerate the techniques that can be used to investigate polymorphism. (9 marks)

2a. Write short notes on the following:

i. Hybrid gender (4 marks)

ii. Genetic structure (4 marks)

b. Ecology and Evolution are considered sister disciplines of life science. Discuss.

(7marks)

3a. Define adaptation. (3 marks)

b. Outline **five** major reasons for extinction. (5 marks)

c. Distinguish between the Prokaryotes and Eukaryotes (7 marks).

4a. Define genetic recombination. (3 marks)

b. What do you understand by population genetics? (3 marks)

c. Explain the importance of linkage in population genetics. (3 marks)

1. Briefly describe the mechanisms for balancing selection. (6 marks).

5a. Define an Ecosystem. (3 marks)

b. Classify mutations by:

i. Inheritance (4 marks)

ii. Aspect of phenotype affected. (4 marks)

c. Outline the fate of mutant alleles. (4 marks)