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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**

**MARCH/APRIL 2016 EXAMINATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE: BIO307**

**COURSE TITLE: EVOLUTION**

**TIME: 2 HOURS**

**CERDIT UNIT: 2**

**INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) QUESTIONS**

1a. Define genetic recombination. (3 marks)

b. Analyze the concept of mutation in molecular biology and genetics. (12 marks)

c. Write **short notes** on the following:

(i) deleterious alleles (5 marks)

(ii) fate of mutant alleles (5 marks)

2ai. Enumerate the key evolutionary innovations that can be used to trace the evolution of

Plant kingdom. (3 marks)

ii. Explain how seeds have improved the adaptations of plants to living on land. (4 marks)

b. Write **short notes** on the following:

(i) hybrid gender (4 marks)

(ii) mechanical isolation (4 marks)

3a. Outline the techniques that can be used to investigate polymorphism. (9 marks)

b. Give a detailed description of the mechanisms for balancing selection. (6 marks)

4ai. what do you understand by Biological Evolution? (3 marks)

ii. Distinguish between prokaryotes and Eukaryotes. (7 marks)

b. Linkage is important in population genetics. Discuss. (5 marks)

5a. Outline the harmful mutations. (7 marks).

b. Write **short notes** on the following:

(i) allopatric speciation (4 marks)

(ii) peripatric speciation. (4 marks)

6ai. What do you understand by the term mutation? (3 marks)

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

b. Classify mutations on the basis of their functional effects. (6 marks)