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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

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

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**MARCH/APRIL 2015 EXAMINATION**

 **SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE: BIO 307**

**COURSE TITLE: EVOLUTION**

**TIME ALLOWED: 2 Hours**

**INTRUCTION: Answer question ONE (1) and any other THREE (3) questions**

1a. What do you understand by Biological Evolution? (3 marks)

 b. Outline the key evolutionary innovations that can be used to trace the evolution of

plant kingdom. (4 marks)

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

(8 marks)

 d. Enumerate the various techniques that can be used to investigate polymorphism in

the laboratories. (4 marks)

 e. Describe the mechanisms for balancing selection. (6 marks)

2a. Distinguish between prokaryotes and Eukaryotes. (7 marks)

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

i. horizontal gene transfer (4 marks)

 ii. genetic structure. (4 marks)

3a. Give the major reasons for extinction. (5 marks)

 b. Account for the following evidences of evolution:

i. Bio-geographical (3 marks)

 ii. Bio-chemical (3 marks)

 iii. Anatomical (4 marks)

4a. Outline the harmful mutations. (7 marks)

 b. Classify mutations on the basis of their functional effects. (8 marks)

5. Account for any three fundamental processes governing population genetics. (15 marks)

6a. List the causes of spontaneous mutation. (5 marks)

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

 (i) deleterious alleles (5 marks)

(ii) fate of mutant alleles (5 marks)