NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SEPTEMBER/OCTOBER 2015 EXAMINATION
SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: BIO 307

COURSE TITLE: EVOLUTION

TIME ALLOWED: 2 Hours

INSTRUCTION:ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER THREE QUESTIONS

1. (a) What is Biological Evolution? (5 marks)
   (b) Write **short notes** on the following:
   (i) Hybrid gender (4 marks)
   (ii) Mechanical isolation (4 marks)
   (iii) Genetic structure (4 marks)
   (c) Outline the any **4** key evolutionary innovations that can be used to trace the evolution of the plant kingdom. (4 marks)
   (d) Seeds have improved the adaptations of plants to living on land. Discuss. (4 marks)
2. There are **four** fundamental processes governing population genetics, account for any **3** of them. (15 marks)

3. (a) Define mutation. (3 marks)
   (b) Provide the classification of mutations by:
   (i) Inheritance (4 marks)
   (ii) Aspect of phenotype affected. (4 marks)
   (c) Enumerate the fate of mutant alleles (4 marks)

4. (a) Outline the techniques that can be used to investigate polymorphism. (9 marks)
   (b) Briefly describe the mechanisms for balancing selection. (6 marks)

5. (a) Define an Ecosystem. (3 marks)
   (b) Ecology and Evolution are considered sister disciplines of the life science. Discuss. (6 marks)
   (c) Explain the meaning of population genetics. (3 marks)
   (d) Linkage is important in population genetics. Discuss. (3 marks)

6. (a) Write **short notes** on the following: (8 marks)
   (i) delaterious alleles
   (ii) fate of mutant alleles
   (b) Give a **detailed** description the concept of extinction in biology of evolution.