



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
DEPARTMENT OF PURE AND APPLIED SCIENCES
OCTOBER/NOVEMBER, 2019 EXAMINATION

COURSE CODE: BIO307
COURSE TITLE: EVOLUTION
CREDIT UNIT: 2
TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS

- 1ai. Define genetic recombination. (2 marks)
ii. What do you understand by the term classification? (2 marks)
b. List the major reasons for extinction. (5 marks)
c. Outline the key evolutionary innovations that can be used to trace evolution in the Plant kingdom. (4 marks)
d. Explain how seeds have improved the adaptations of plants to living on land. (4 marks)
e. Ecology and Evolution are considered sister disciplines of the life sciences. Discuss. (8 marks)
2. There are four fundamental processes governing population genetics, account for any three of them. (15 marks)
- 3a. In a rat population, 10% of the alleles for coat color are for albino (**b**), and 90% are for black (**B**). If the Hardy-Weinberg assumptions hold true, calculate the percentage of the rats that are heterozygous (6 marks)
b. Classified mutations on the basis of the following:
i. Special class (3 marks)
ii. Functional effects. (6 marks)
4. Adaptation, speciation and hybrid gender are very important in Evolution- Discuss with reference to their outcomes (15 marks)
- 5a. Define an Ecosystem. (2 marks)
b. Explain the meaning of population genetics. (3 marks)
c. Linkage is important in population genetics. Discuss. (3 marks)
d. In a Tabular form, distinguish between prokaryotes and Eukaryotes using the following characteristics: i. size, ii. genetic material, iii. site of nuclear material, iv. organelles, v. cell wall, vi. respiration and vii. Reproduction (7 marks)