



**National Open University Of Nigeria**  
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**  
**Faculty of Science**  
**OCTOBER/NOVEMBER 2016 EXAMINATION**

**COURSE CODE: BIO 304**

**COURSE TITLE: GENERAL ECOLOGY**

**TIME ALLOWED: 2 Hours**

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

1. (a) Give a **detailed** description of how industrialization has contributed to global warming (7marks)  
(b) It is important to sustain the earth's biodiversity- Discuss (6 marks)  
(c) Write **shorts notes** on the following:
  - (i) Denitrification (4 marks)
  - (ii) Population life tables (4 marks)
  - (iii) Territories (4 marks)
2. (a) What do you understand by the term ecosystem? (2 marks)  
(b) With the help of a well **labeled diagram**, describe the carbon cycle (13 marks)
3. (a) Define the term Biogeochemical Cycle (2 marks)  
(b) Enumerate the components of an ecosystem giving **two** examples of each (4 marks)  
(c) Write **short notes** on the following:
  - (i) Nitrogen fixation (3 marks)
  - (ii) Communitybers (3 marks)
  - (iii) Pyramid of numbers (3 marks)
4. (a) Describe the structure of communities from an ecological perspective (6 marks)  
(b) Write **short notes** on the following:
  - (i) Denitrification (3 marks)
  - (ii) Efficiency of energy transfer (3 marks)
  - (iii) Energy flow (3 marks)
5. (a) Define the term global warming (2 marks)  
(b) Distinguish between carbon cycle and other nutrient cycles. (2 marks)  
(c) Outline the importance of photosynthetic plants in the ecosystem. (4 marks)  
(d) Give a **detailed** description of the components of a human population pyramid. (7 marks)
6. (a) Account for the fact humans are considered to be initiators of secondary succession. (7 marks)  
(b) Differentiate between the following:
  - (i) Autotrophs and heterotrophs. (2 marks)
  - (ii) Gross primary productivity and net primary productivity (2 marks)
  - (iii) Density-dependent and density-independent factors of population regulation (2 marks)
  - (iv) A habitat and a niche (2 marks)