



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**Plot 91, Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**  
**FACULTY OF SCIENCES**  
**DEPARTMENT OF ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT**  
**2025\_2 EXAMINATIONS.**

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**COURSE CODE: ESM426**

**COURSE TITLE: Biogeography**

**CREDIT: 2Units**

**TIME ALLOWED: 2 Hours**

**Instruction:** Attempt question number ONE (1) and any other TWO (2) questions. *Question number one (1) carries 30marks, while the other questions carry (20) marks each.*

1a) Describe primary biological production in an ecosystem **(9marks)**

1b) Explain the detritus food chain **(6marks)**

1c) Write explanatory notes on the following ecological concepts. **(15marks)**

*i)Parasiticism      Antibiosis*

*Commensalism      Prediation*

*Mutualism*

(2a) Discuss the ecological characteristics of biological desert **(10 marks)**

2b) State and explain the sources of energy in the functioning of an ecosystem. **(8marks)**

2c) Using appropriate equation explain the process of photosynthesis in green plants**(2marks)**

3a) Discuss the following terms **(9 marks)**

*i)Commensalism ii)Proto-cooperation iii)Mutualism or Obligate Symbiosis*

3b) Explain the importance of the following in ecosystem functioning.

*i) Decomposers (7marks)      ii)Solar energy (4marks)*

4a) Explain the term ecosystem equilibrium **(10 marks)**

4b) With appropriate illustration describe the grazing food chain **(10marks)**

5a) Using adequate example describe a resilient ecosystem **(8 marks)**

5b) State factors that promote resilience in an ecosystem **(12 marks)**