

**National Open University of Nigeria**

**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**

**Faculty of Science**

**APRIL, 2019\_1 EXAMINATIONS**

**COURSE CODE: ESM 343**

**COURSE TITLE:** CLIMATE CHANGE AND THE ENVIRONMENT **.**

**CREDIT: 2 Units**

**TIME ALLOWED: 2 Hours**

**Instruction:** Attempt question number ONE (1) and any other THREE (3) questions. Question number one (1) carries 25 marks, while the other questions carry (15) each marks.

Q1a

1. What are the factors that influence temperature distribution on earth’s surface? **(3 marks)**
2. Explain the basic composition of the atmosphere **(3 marks)**

b.

i. Draw and label the zones of the atmosphere **(3 marks)**

ii. List and explain the processes that modify solar radiation **(3 marks)**

c.

i. State the processes by which earth surface is being heated **(2 marks)**

ii. Describe energy characteristics of urban areas. **(2 marks)**

d. Briefly explain the following:

i. Temperature **(2 marks)**

ii. Pressure **(2 marks)**

e.

i. Define the term acid precipitation and pH **(3 marks)**

ii. List four factors responsible for climate change **(2 marks)**

Q2a.

i. What is ocean current and what are their causes**?(3 marks)**

ii. Discuss how the history of past climate can be reconstructed. **(3 marks)**

b.

i. What are proxy data? Explain three (3) examples that you know **(3 marks)**

ii. State the importance of three (3) gases to plant, man and the environment **(6 marks)**

Q3a.

i. Elaborate on the term environmental lapse rate **(3 marks)**

ii. Describe each layer of the atmosphere **(5 marks)**

b.

i. Define the term albedo **(3 marks)**

ii. List uses of solar energy **(4 marks)**

Q4a.

i. Explain what is meant by atmospheric pressure. **(3 marks)**

ii. Examine the Gas Law as it relates to the atmosphere. **(4 marks)**

b.

i. Air has mass and exerts pressure in space. Explain. **(3 marks)**

ii. Describe a simple experiment on how to measure atmospheric pressure. **(5 marks)**

Q5a.

i. With the aid of annotated diagrams, explain how atmospheric pressure can be

 measured. **(5 marks)**

ii. Describe the formation of acid precipitation **(4 marks)**

b.

i. State the effects of acid deposition on the environment **(3 marks)**

ii. Define climate change **(3 marks)**