**National Open University of Nigeria**
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**
**Faculty of Science**
**2020_1 EXAMINATION**

**COURSE CODE: ESM 343**
**COURSE TITLE: Climate Change and 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) marks each.

1a) Enumerate the effects of climate change on a global scale**.** **(16marks)**
1b) What accounts for air density being greatest at the ground and decreases at higher altitudes? **(1mark)**
1c) Discuss thermal usage of solar energy. **(4marks)**
1d) Differentiate between ozone in the upper atmosphere and ozone in the lower atmosphere **(4 marks)**

2a) Give a detailed description of the term succession**.** **(5 marks)**
2b) Identify five major sources of nitrogen oxides **(5 marks)**
2c) Identify five earth's surface reflectivities. **(5 marks)**

3a) Briefly discuss how to measure atmospheric pressure according to Evangelista Torricelli. **(4marks)**
3b) Define global warming. **(2marks)**
3c) List five effects of a decrease in the concentration of ozone in the ozone layer**. (6marks)**
3d) The heat-trapping gases in the atmosphere are generally referred to as greenhouse gases, why? **(3marks)**

4a) Mention two specific kinds of albedo and explain each one. **(6 marks)**
4b) Identify five major sources of nitrogen oxides. **(5 marks)**
4c) Identify three categories in which the possible uses of solar energy fall into **(3 marks)**
4d) Air pressure always decreases with increasing height above the ground, why? **(1mark)**

5a) Complete the table below **(10 marks)**

| **Attribute** | **Early stages of succession** | **Late stages of succession** |
|---|---|---|
| Plant Leaf Canopy Structure | | |
| Role of Decomposers in Cycling Nutrients to Plants | | |
| Biogeochemical Cycling | | |
| Rate of Net Primary Productivity | | |
| Community Site Characteristics | | |

5b) Describe the ozone layer. **(3 marks)**

5c) What is responsible for climatic differences between cities and rural areas? **(2 marks)**