National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science
2023_1 POP EXAMINATION

COURSE CODE: ESM343
COURSE TITLE: Climate Change and Environment
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). Within the atmosphere list meteorologists do in order to understand the events that occur within the atmosphere **(2marks)**
1b). Discuss 5 most common examples of proxy data **(10marks)**
1c). Explain the characteristics of the troposphere*(**7marks**)
1d). Discuss the following concepts in regards to waste treatment;
   Septic tank **(7marks)**
   Equalization tank **(4marks)**

2). Discuss the role of the following in the atmosphere/Explain the role of Methane in the atmosphere. **(9 marks)**
2b). Discuss the three options available in secondary sedimentation. **(8marks)**
2c). List the activities that are involved in primary treatment**(3marks)**

3a). Complete the table **(10marks)**

Gas Name	Volume	Chemical Formula
-----**1**	78.08%	N_2
Oxygen	-----**4**	O_2
Water	-----**5**	H_2O
Argon	0.93%	-----**7**
------**2**	0.0360%	CO_2
Neon	0.0018%	------**8**
Helium	-----**6**	He
Methane	0.00017%	---**9**
Hydrogen	0.00005%	----**10**
-----**3**	0.00003%	N_2O
Ozone	0.000004%	O_3

3b). What are the functions of water vapour**(3marks)**?
3c). List the composition, that primarily makes up a meteorologist's description of the air **(3marks)**
3d). List the basic objectives of waste water treatment**(4marks)**

4a). The distribution of temperature on the earth us influenced by what factors? **(4marks)**

4b). Diagrammatically illustrate the latitudinal zonation of temperature **(3marks)**

4c). Discuss the earth's climatic history in regards to;

    i.   *Meteorological instrument records, (4marks)*

    ii.   *Written documentation and descriptive accounts of the weather (4marks)*

4d). Discuss the tertiary method of treatment of wastewaters**(5marks)**

5). Write short notes on the following;

i. Air Pressure **(8marks)**

ii. Wind **(7marks)**

iii.Lagoons (oxidation ponds) **(5marks)**