



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

COURSE CODE: ESM 311

COURSE TITLE: AIR AND NOISE POLLUTION.

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) What is air pollution? **(3marks)**
- 1b) Distinguish between primary pollutants and secondary pollutants **(5marks)**
- 1c) Describe the role of the following chemicals in the atmosphere. **(7marks)**
- i) Carbon dioxide (CO₂) **(3marks)**
 - ii) Carbon monoxide (CO) **(2marks)**
 - iii) Nitrogen (N₂) **(2marks)**
- 1d) State 4 functions of FEPA (now the Ministry of Environment) as enshrined in the Decree 58 of 1988 **(5 marks)**
- 1e) What are the major anthropogenic sources of air pollution? **(3 marks)**
- 1f) Give the noise level of the following activities in the environment **(2 marks)**
- i) Loud Rock Music **(½mark)**
 - ii) Traffic **(½mark)**
 - iii) Background office noise **(½mark)**
 - iv) Conversation **(½mark)**
- 2a) Highlight the effects of pollution on the atmosphere **(3marks)**
- 2b) Explain how air pollution affects humans health **(6marks)**
- 2c) List the classes of pollutants based on chemical composition **(6marks)**
- 3a) Define noise pollution **(2marks)**
- 3b) Mention the six major pollutants defined by Environmental Protection Agency of the United States of America for which air standards have been set for protection of human health and welfare (**3marks**)
- 3c) List the natural sources of air pollution **(6 marks)**
- 3d) Mention major strategies and policies for protection of Nigerian Environment **(4marks)**

4) Succinctly discuss the following types of noise pollution. **(15marks)**

- i. Road Traffic Noise **(1mark)**
- ii. Air Craft Noise **(2marks)**
- iii. Noise from railroads **(3marks)**
- iv. Construction Noise **(2marks)**
- v. Noise in Industry **(3marks)**
- vi. Noise in building **(3marks)**
- v. Noise from Consumer products **(1mark)**

5a) What are the specific sources of hydrocarbons and volatile organic carbons? (3marks)

5b) Mention the sources of Nitrogen-containing compounds. **(2marks)**

5c) What is the associated sound of the following dBA Levels **(5marks)**

- i) 0
- ii) 85
- iii) 100
- iv) 120
- v) 140

5d) Differentiate between noise and sound **(5marks)**