



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

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| <b>QUALIFICATION : BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES</b> |                              |
| <b>QUALIFICATION CODE: 08BOHS</b>                                | <b>LEVEL: 6</b>              |
| <b>COURSE: AIR POLLUTION AND NOISE</b>                           | <b>COURSE CODE: APN 612S</b> |
| <b>DATE: JANUARY 2025</b>  | <b>SESSION: 2</b>            |
| <b>DURATION: 3 HOURS</b>   | <b>MARKS: 100</b>            |

**SUPPLEMENTARY/SECOND OPPORTUNITY: QUESTION PAPER**

**EXAMINER:** *Prof Omotayo Awofolu*

**MODERATOR:** *Dr Larai Aku-Akai*

**INSTRUCTIONS**

1. Answer all questions in the answer booklet provided.
2. Please write **neatly** and **legibly**.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

**PERMISSIBLE MATERIALS**

1. None

**ATTACHEMENTS**

1. None

**This paper consists of 3 pages including this front page**

**SECTION A:****[20 MARKS]****QUESTION 1:****[20 MARKS]**

- 1.1 List **any four (4)** characteristics that are required to be possessed by all air sampling devices. (4)
- 1.2 (i). Explain the terms passive and non-passive sampling systems. (3)  
(ii). State the advantages and disadvantages of each term (3)
- 1.3 Briefly describe the following terms:  
i. Photochemical smog (4)  
ii. Air pollution (3)  
iii. Organoleptic method (3)

**SECTION B:****[27 MARKS]****QUESTION 2:****[27 MARKS]**

- 2.1 Environmental Health Inspectors found that students were exposed to sound Pressure Level of 30  $\mu\text{Pa}$ . If the lowest human hearing threshold is 20  $\mu\text{Pa}$ . Determine the Sound Pressure level (SPL) in d(B). (4)
- 2.2 Primary methods can be used to improve indoor air quality. State these methods. (6)
- 2.3 State any four (4) impacts of acid rain on the environment. (8)
- 2.4 Air pollutants are generated at homes due to several activities. Provide any six (6) sources of air pollutants that can be generated at homes. (9)

**SECTION C:****[53 MARKS]****QUESTION 3:****[17 MARKS]**

- 3.1 Briefly explain the process of measuring gas using the Bubbler System (5)
- 3.2 List and briefly explain the primary methods that can be used to improve the quality of indoor air. (6)
- 3.3 Explain the following terms:  
i. Sleep disturbance (3)  
ii. Inlet manifold (3)

**QUESTION 4:**

**[36 MARKS]**

- 4.1 Differentiate between Statutory and Regulatory Laws and give an example of Namibian law in each case. (6)
- 4.2 Explain how businesses contribute to the problem of air pollution through various activities (8)
- 4.3 Discuss **any five (5)** impacts of global warming on human and environmental Health. (10)
- 4.4 Differentiate between the following terms giving example in each case:
- i. Sound and Noise (3)
  - ii. Weather and Climate (3)
  - iii. Primary and secondary pollutants (3)
  - iv. Wet deposition and dry deposition (3)

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**END OF QUESTION PAPER**