



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH AND APPLIED SCIENCES**

**DEPARTMENT OF HEALTH SCIENCES**

<b>QUALIFICATION : BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES</b>	
<b>QUALIFICATION CODE: 08BOHS</b>	<b>LEVEL: 6</b>
<b>COURSE CODE: APN 612S</b>	<b>COURSE NAME: AIR POLLUTION AND NOISE</b>
<b>SESSION: NOVEMBER 2022</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	PROFESSOR OMOTAYO AWOFOLU
<b>MODERATOR:</b>	Ms MOUYELELE HAUFIKU

<b>INSTRUCTIONS</b>	
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.	

**PERMISSIBLE MATERIALS:**

1. Pen
2. Ruler
3. Non-Programmable Calculator

**THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)**

## SECTION A [25 MARKS]

### QUESTION 1 [25 MARKS]

- 1.1 The adverse human health effects caused by Particulate Matters (PMs) are linked to their sizes. State the characteristics that defines coarse particles. [4]
- 1.2 Environmental Health Sciences students are exposed to noise at 95dB from nearby construction work during Air Pollution and Noise lecture. Provide any **five (5)** effects of the exposure on the students. [6]
- 1.3 Describe, in stepwise manner, the process you will take in investigating noise pollution complaint by a resident. [5]
- 1.4 Residents near a local entertainment outlet in Windhoek were found to be exposed to sound pressure level (SPL) of 50  $\mu$ Pa. If the hearing threshold is 20  $\mu$ Pa. Determine the SPL (in decibel). [4]
- 1.5 Inhabitants of an area along B1 road in Windhoek complained of exposure to noise from the road. Explain control measures you will present to the municipal manager. [6]

## SECTION B [25 MARKS]

### QUESTION 2 [25 Marks]

- 2.1 Part 6, sub-section 3 of the Tobacco Products Control Act No.1 of 2010 allow the Minister to prohibit the smoking of any tobacco product in public places.  
 (i). State **any four (4)** of such places giving an example each case. [6]  
 (ii). Provide the reasons for the prohibition. [4]
- 2.2 State **any six (6)** situations in which municipal bye-laws allow the broadcast of noise. [9]
- 2.3 Briefly explain the following legislative terms giving an example in each case:  
 (i). Statutory Law [2]  
 (ii). Regulations [2]  
 (iii). Air Quality Standards [2]

## SECTION C [50 MARKS]

### QUESTION 3 [18 MARKS]

- 3.1 Clarify the term “organoleptic method” and state its advantage over the chemical method. [5]
- 3.2 Describe the characteristics used to express odour by sensory technique. [4]
- 3.3 Explain the main types of air pollutants in the environment. [4]

- 3.4 Outline the desirable characteristics expected of all air sampling devices. [5]

**QUESTION 4 [32 MARKS]**

- 4.1 Enumerate possible effects of climate change in Namibia [6]
- 4.2 Define visibility and briefly explain the factors that can influence impaired visibility. [6]
- 4.3 Explain the concept of the Natural Greenhouse Effect and support your answer with an illustration. [8]
- 4.4 Illustrate how industries or businesses can significant contribution to air pollution. [12]

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**TOTAL: 100 MARKS**