COURSE CODE: ESM311
COURSE TITLE: Noise and Air Pollution
CREDIT: 2 Units
TIME: 2:30 MINUTES
Instructions: 1. Attempt question Number one (1) and any other (2)

    2. Question Number 1 is compulsory and carries 30 marks, while other questions carry equal marks of (20 marks) each

1. Discuss the mitigation strategies and controlling agencies and their roles of air pollution in Nigeria.   **(30 Marks)**

2a. Discuss the differences between photochemical smog and industrial smog.   **(10 Marks)**

2b. List four (4) impact of smog on air quality.   **(10 Marks)**

3a Explain the chemical reactions involved in acid rain formation   **(10 Marks)**

3b. Outline impacts of acid rain on ecosystems.   **(10 Marks)**

4a. Discuss the key steps involved in implementing an effective waste management system. **(10 Marks)**

4b. Outline limitations of effective waste management system in Nigeria.   **(10 Marks)**

5a. Explain the role of sound insulation in mitigating noise pollution.   **(10 Marks)**

5b. outlines the principles used in sound insulation for buildings.   **(10 Marks)**

The weight to the nearest kilogram, of a group of 50 students in a college of technology are given below:

65,	70,	60,	46,	51,	55,	59,	63,	68,	53,	47,
53,	72	53,	67,	62,	64,	70,	57,	56,	73,	56,
48,	51,	58,	63,	65,	62,	49,	64,	53,	59,	63,
50,	48,	72,	67,	56,	61,	64,	66,	52,	49,	62,
71,	58,	53,	69,	63,	59.					

(a) Prepare a Group Frequency Table with class intervals 45-49, 50-54, 55-59. Etc. (5 marks)

(b) Using an assumed mean of 62 or otherwise, calculate the, mean and the standard deviation of the grouped data. (10 marks)

(c) Correct your answer in question (b) above to one decimal place. (5 marks)

A man P has 5 red, 3 blue and 2 white buses. Another man Q has 3- red, 2 blue and 4 white buses. A bus owned by P is involved in an accident with a bus belonging to Q.

(a) Calculate, the probability that two buses are not of the same colour.

A man travels from Nigeria to Ghana by air and from Ghana to Liberia by ship. He returns by the same means. (10 marks)

(b) The man has 6 airlines and 4 shipping lines to choose from. In how many ways can he make his journey without using the same airlines or shipping line twice? (10 marks)