



## TECHNICAL UNIVERSITY OF MOMBASA

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SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

**ECV 4521 : INDUSTRIAL POLLUTION**

SPECIAL/SUPPLEMENTARY EXAMINATION

**SERIES: MARCH 2025**

**TIME: 2 HOURS**

### **PAPER B**

#### **Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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### **QUESTION ONE (COMPULSORY) 30 Marks**

- a) Explain the following effects of air pollution
  - i) Respiratory and heart problem
  - ii) Global warming
  - iii) Acid rain (9 marks)
- b) Explain the following
  - i) Sick building syndrome(SBS)
  - ii) Ambient air
  - iii) Ambient air pollution
  - iv) Ambient(outdoor) air pollution (4 marks)
- c) Outline the impacts of noise pollution to humans (7 marks)
- d) Explain the effects of heavy metal in water (10 marks)

### **ANSWER ANY TWO QUESTIONS FROM THIS SECTION**

#### **QUESTION TWO (20 Marks)**

- a) Define water pollution and explain the following causes of water pollution
  - i) Industrial waste

- ii) Sewage and wastewater
- iii) Global warming (10 marks)
- b) Write on effects of noise pollution on humans (6 marks)
- c) Outline burning of fossil as a cause of air pollution (4 marks)

### **QUESTION THREE (20 Marks)**

- a) Explain the following types of pollutants
  - i) Thermal pollutants
  - ii) Nutrients
  - iii) Suspended (8 marks)
- b) State the effects of water pollution to the environment (6 marks)
- c) Outline the effects of the following pollution
  - i) Mercury pollution
  - ii) Lead pollution (6 marks)

### **QUESTION FOUR (20 Marks)**

- a) Explain the following particulate matters which are airborne and nongaseous pollutants
  - i) Dust
  - ii) Fumes
  - iii) Smoke (9 marks)
- b) Explain the term community noise control (7 marks)
- c) Explain the common principles used for removing pollution from exhaust gases (4 marks)

### **QUESTION FIVE (20 Marks)**

- a) Write on industrial noise control (4 marks)
- b) Outline on the following mechanical ventilation
  - i) Exhaust input method
  - ii) Plenum ventilation
  - iii) Air conditioning (9 marks)
- c) Name the sources of radiation pollution (4 marks)
- d) Sketch and indicate the dust movement in dust catcher (3 marks)

