



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR: BACHELOR OF SCIENCE IN CIVIL ENGINEERING

ECV 4521 : INDUSTRIAL POLLUTION CONTROL

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2023

TIME: 2 HOURS

DATE: 15 Apr 2025

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.

QUESTION ONE (COMPULSORY)

QUESTION 1 (30 MARKS)

- (a) Describe **FOUR** important characteristics of sound waves (8 Marks)
- (b) Clearly describe the “Sick Building Syndrome” (SBS) and explain its **FOUR** major causes (10 Marks)
- (c) Describe **FIVE** factors to consider when setting up ambient air quality limits as per the NEMA ACT of 2016. (5 Marks)
- (d) Explain Sources of chemical pollutants which can affect ground water quality. (7 Marks)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION

QUESTION 2 (20 MARKS)

- (a) Describe any **THREE** prevention measures of large scale water pollution in order to reduce harmful effects, taking into account that water is scarce (6 Marks)
- (b) Describe **THREE** steps in environmental design criteria for project engineering (10 Marks)
- (c) Ventilation is considered an “engineering control” to remove contaminants released in indoor work environment. Describe Four other ways to control such contaminants (4 marks)

QUESTION 3 (20 MARKS)

- (a) What are the main objectives of Environmental Education Awareness Initiative (EEAI) in Kenya? (3 Marks)
- (b) Elaborate on key areas to be covered by EEAi in Kenya detailing well any stakeholders involved. (7 Marks)
- (c) Describe **FIVE** approaches which can be used in the implementation of EEAi in Kenya. (10 Marks)

QUESTION 4 (20 MARKS)

- (d) The control of Noise is possible at **THREE** different stages of its transition. Describe the three stages elaborating well how industrial noise control can be effected giving an example. (7 Marks)
- (a) Describe common sources of radioactive waste and detail its classification. (9 Marks)
- (b) With aid of a diagram describe potential movement of radioactive materials from waste storage areas to accessible environment. (4 Marks)

QUESTION 5 (20 MARKS)

- (a) Describe **SEVEN** sources of fugitive emission air pollutants (7 marks)
- (b) Describe safety provisions for a workplace to be provided for during design to assure for safety provisions incase of fire as per the OSH Act of 2007 in Kenya. (13 marks)