



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR

FIRST YEAR SEMESTER TWO EXAMINATIONS

FOR THE

DIPLOMA

IN

CIVIL ENGINEERING AND BUILDING TECHNOLOGY

COURSE CODE: DCE 062/DBC 062

COURSE TITLE: OCCUPATIONAL SAFETY AND HEALTH

DATE: WEDNESDAY 27TH APRIL 2022 TIME: 8.00AM – 10.00AM

INSTRUCTIONS:

1. This paper contains FIVE questions
2. QUESTION ONE IS COMPULSORY
3. Attempt any other THREE questions
4. Marks for each question are indicated in the parenthesis.
5. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE – COMPULSORY (25 MARKS)

- (5 Marks)
- a. Define the following terms as used in occupational health and safety
 - i. Occupational health and safety
 - ii. Risk
 - iii. Hazard
 - iv. Safety
 - v. Accident
 - b. Outline the limitation of using ladders as a safety precaution measure in a building construction site (4 Marks)
 - c. Outline control measures to help reduce the risk of injury from electricity when using portable electrical tools (4 Marks)
 - d. Scaffolding has been erected to the outside of a block of high-rise flats in order to carry out window replacement and repairs to external cladding. Outline what could affect the stability of the scaffold. (5 Marks)
 - e. A contaminated land site is to be redeveloped into a housing estate. The works will involve demolition and site clearance before the new build can take place. Identify welfare facilities that should be available on this site (6 Marks)

QUESTION TWO (15 MARKS)

- a) Silica can be found in various materials used in construction. Exposure to silica dust can lead to chronic health effects.
 - i. Give the meaning of the term 'workplace exposure limit'. (2 Marks)
 - ii. Outline control measures that could be considered to control levels of lead dust in the workplace (5 Marks)
- b) A single-storey farm building is to be demolished using an excavator. Outline control measures that the method statement should contain for this activity (8 Marks)

QUESTION THREE (15 MARKS)

- a. Define the term ergonomic as used in occupational health and safety (1 Mark)
- b. Describe the ergonomic hazards in a construction site (6 Marks)
- c. Explain the precautions that should be followed when using flammable chemicals in a construction site (8 Marks)

QUESTION FOUR (15 MARKS)

- a. Give **FIVE** hazards that are likely to occur during excavation if not controlled (5 Marks)
- b. Discuss **FOUR** types of injury resulting from manual handling (4 Marks)
- c. Give **THREE** acute and chronic effects arising from exposure to noise (6 Marks)

QUESTION FIVE (15 MARKS)

- a. What is PPE (1 Mark)
- b. Give **THREE** factors to be considered for the selection of PPEs (3 Marks)
- c. What factors affect the use of PPEs (3 Marks)
- d. Giving examples of each discuss **FOUR** types of PPEs used in the construction industry (8 Marks)

QUESTION ONE – COMPULSORY (25 MARKS)

- a) Outline **five** sources of information for the site investigation. (10 Marks)
- b) State any **three** functions of the following in a flexible pavement. (9 Marks)
- i. Weaving course
 - ii. Sub- base
 - iii. Sub- grade
- c) Sketch and label a section through a rigid pavement. (6 Marks)

QUESTION TWO (15 MARKS)

- a) Outline **three** planning survey for transportation systems. (6 Marks)
- b) Outline **three** modes of transportation in reaction to the media surrounding man (6 Marks)
- c) State **three** advantages of road transportation over other transport systems. (3 Marks)

QUESTION THREE (15 MARKS)

- a) With the aid of sketches outline the construction methods of macadam and transegasts roads (10 Marks)
- b) State **five** factors that influence the thickness of a road pavement (5 Marks)

QUESTION FOUR (15 MARKS)

- a) Differentiate between each of the following cross sectional elements of a roadway (5 Marks)
- i. Shoulder and a footpath
 - ii. Traffic island and central reserve
- b) Describe the history of an ancient roman road transportation system. (10 Marks)

QUESTION FIVE (15 MARKS)

- a) Explain the construction procedure of an edge type gravel road (10 Marks)
- b) State **five** requirements of pavement construction materials. (5 Marks)