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(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY SPECIAL / SUPPLEMENTARY EXAMINATIONS
2021 / 2022 ACADEMIC YEAR**

FOURTH YEAR SECOND SEMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF TECHNOLOGY
IN
BUILDING CONSTRUCTION**

COURSE CODE: BTB 442

COURSE TITLE: BUILDING SERVICES AND MAINTENANCE

DATE: 7TH OCTOBER 2022

TIME: 3 – 5 P.M

INSTRUCTIONS:

1. This paper contains FOUR Questions
2. Answer question ONE and any other TWO
3. Marks for each question are indicated in the parenthesis.
4. It is in the best interest of the candidate to write legibly
5. Examination duration is 2 Hours

MMST observes ZERO tolerance to examination cheating

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

QUESTION 1 (30 marks)

- a) Discuss **Five (5)** advantages of outsourcing various operational services at MMUST as a large educational facility (**10 marks**).
- b) Discuss **Four (4)** ways in which Facility Management can add value to the core business through its critical success factors (**8 marks**).
- c) Describe Six (6) ways in which Physical and Land Use Planning Act of Kenya, 2019 ensures safeguarding of the environment (**12 marks**).

QUESTION 2 (20 marks)

- a) Describe **Two (2)** types of accidents likely to occur during building maintenance, giving the causes and the possible tips for prevention (**3 marks**).
- b) Explain **Six (6)** challenges faced by building contractors in Kenya in ensuring compliance to regulations of the National Construction Authority (**6 marks**).
- a) Explain the difference between surface conduit wiring and concealed conduit wiring in electrical distribution in a building (**3 marks**).
- b) Explain **Four (4)** advantages and **Four (4)** disadvantages of concealed conduit wiring (**8 marks**).

QUESTION 3 (20 marks)

- a) Describe the critical provisions of Kenya's Environmental Management and Co-ordination Act (EMCA) of 1999 amendment 2015 (**8 mks**).
- b) Discuss **Five (5)** weaknesses of the National Construction Authority of Kenya (NCA) in the execution of its mandate (**5 Marks**).
- c) Explain **Seven (7)** ways of improving HVAC ecological footprints (**7 marks**).

QUESTION 4 (20 marks)

- a) As a newly appointed facility manager for a large commercial facility, describe **Four (4)** types of inspection that you would recommend the owner for adoption in order to effectively manage the facility (**4 marks**).
- b) Describe **Four (4)** key proactive approaches that preventive maintenance involves in facility management (**8 marks**).
- c) Discuss **Eight (8)** facilities operational services that can be outsourced for effective management of a large commercial building (**8 marks**).