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(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITRY EXAMINATIONS 2022/2023 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF TECHNOLOGY IN BUILDING CONSTRUCTION

COURSE CODE: BTB 341

COURSE TITLE: BUILDING SERVICES AND CONTROL SYSTEMS

DATE: 16TH DECEMBER 2022 **TIME:** 8- 10 A.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. Examination duration is **2 Hours**

MMUST observes ZERO tolerance to examination cheating

QUESTION 1 (30 marks)

a) With aid of diagrams for different sound attenuations, explain **Five (5)** construction techniques for walls in acoustic planning of buildings. **(10 mks).**

b) Describe **Six (6)** factors that affect thermal comfort of occupants in buildings **(12 marks).**

c) Explain **Four (4)** proactive approaches that can be employed to improve the functioning of various building services **(8 marks).**

QUESTION 2 (20 marks)

a) Explain any **four (4)** building components that can provide solar control and shading **(4 mks)**

b) Discuss the role of **a) light shelves** and b) **canopies** in buildings **(4 mks).**

c) Describe with diagram(s) **Two (2)** green shading methods that can be used to regulate thermal environment in buildings **(4 mks).**

d) With reference to various material types, sizes and sanitary plumbing fittings, rooms and using a clearly labeled section diagram of a maisonette describe the process of cold and hot water supply in a residential building **(8 marks).**

QUESTION 3 (20 marks)

a) Explain any **two salient (2)** design considerations and factors to consider in positioning of an elevator in a high-rise building **(2 mks)**

b) Explain using **Five (5)** appropriate examples and diagrams where possible how you would use the principles of source, path, and receiver noise control in managing different sources of noise within Masinde Muliro University. **(10 mks).**

c) Explain sound masking in acoustics with reference to reducing the open plan office problems **(8 marks)**