



FACULTY OF ENGINEERING
END OF SEMESTER EXAMINATIONS - APRIL 2025

PROGRAMME: BACHELOR OF CIVIL ENGINEERING

YEAR/SEM: YEAR 4/SEMESTER 2

COURSE CODE: BCE4205

NAME: URBAN ENGINEERING

DATE: 2025-04-14

TIME: 9:00AM-12:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

Section A • The examination consists of Eight (8) questions, in two sections A and B • Attempt at least Two (2) questions in each section for full marks. • Begin each question on a fresh page • All questions carry equal marks • Do not write on the question paper. All rough work MUST be done on the official answer booklet.

Question 1:

- a) Discuss any five (5) housing development approaches commonly used in urban environment **(10 Marks)**
- b) Life cycle costing requires that any urban housing must be appraised throughout its life. What are the steps applied in life cycle costing **(10 Marks)**

Question 2:

- a) a) Refer to an assessment that you have conducted on the level of solid waste management in Uganda. Your assignment is to evaluate the status and propose solutions for improving waste management. Discuss how you intend to make better the solid waste management system under the following themes: reducing the amount of waste generated, collection of waste, transportation and treatment of waste. **(8 Marks)**
- b) b) Explain the integrated solid waste management (ISWM) highlighting the various stakeholders, waste system elements and relevant aspects involved. Discuss the 4Rs in ISWM. **(12 Marks)**

Question 3:

- a) a) What is urbanization? Discuss the process of urbanization use sketches where necessary. **(10 Marks)**
- b) b) Discuss the forms of urban development commonly found world over. **(10 Marks)**

Question 4:

- a) Several urban areas have been faced with inadequate infrastructure crisis. This has piled pressure on the static resources, calling for urgent interventions. Discuss the possible causes of inadequate urban infrastructure **(08 Marks)**
- b) Reference is made to the recent collapse of Kitezi land fill in Wakiso District. You have been contracted as technical officer to support Kampala Capital City Council to help in decommissioning the landfill and suggesting solutions of designing a new landfill. Provide guidance on how you intend to approach these two assignments **(12 Marks)**

Section B • The examination consists of Eight (8) questions, in two sections A and B • Attempt at least Two (2) questions in each section for full marks. • Begin each question on a fresh page • All questions carry equal marks • Do not write on the question paper. All rough work MUST be done on the official answer booklet.

Question 1:

- a) Discuss the challenges commonly faced water supply infrastructure in Kampala. Suggest solutions to the challenges you have discussed above **(12 Marks)**
- b) Explain eight (8) approaches to sustainable urban transport **(08 Marks)**

Question 2:

- a) Why is public participation necessary in urban planning? **(08 Marks)**
- b) Discuss the various forms of participation in urban planning. **(12 Marks)**

Question 3:

- a) What is community decision making? Discuss the steps involved in community decision making. **(10 Marks)**
- b) Biases are some of the challenges that influence decision making. This is because a community is made up different people with varying needs, attributes, and perceptions. Explain the various biases that are likely to be encountered during decision making **(10 Marks)**

Question 4:

- a) Describe the six (6) theories that have influenced urban housing architecture? **(12 Marks)**
- b) By using sketches only, list the various urban housing typologies you know. **(08 Marks)**