



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021

**FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
ENVIRONMENTAL PLANNING AND MANAGEMENT**

EPM 144: PLANNING FOR URBAN PUBLIC UTILITIES

DATE: Tuesday, 16th March 2021

TIME: 8.00 a.m. - 10.00 a.m.

INSTRUCTIONS:

Answer Question ONE and any other TWO Questions

1. a) Explain the following concepts and principles in urban public utilities:
 - i) Inelastic demand (4 marks)
 - ii) Public utilities (5 marks)
 - iii) Principle of equity in public utilities (5 marks)
- b) Explain Eight functional characteristics of public utilities. (16 marks)
2. A town X in the central highlands of Kenya has a population of 500 households and receives an annual rainfall of 1800 mm per year. The soil is generally clay loam soils and has a thick forest cover. The likely major source of water for the town is about 1km, and the average household size is four members. The county government has engaged your service as a planner. Using this background information, answer the following questions.
 - a) Identify four likely sources of water for town X? (8 marks)
 - b) Give three factors you will consider when planning water supply for town X (6 marks)
 - c) Calculate the annual water requirement for the households in town X. (5 marks)
 - d) What role do the forest play in relation to water supply in the region? (1 marks)

3. a) What do you understand by public utilities? (4 marks)
- b) How is Kenya Power and Lighting Company as a public utility provider different from ordinary business in your county? (16 marks)
4. Explain FIVE factors to be considered in the design of utilities systems? (20 marks)
5. With reference to public utilities, explain the relationship between urban and rural planning process in Kenya. (20 marks)