



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

QUALIFICATION: BACHELOR OF REGIONAL AND RURAL DEVELOPMENT BACHELOR OF TOWN AND REGIONAL PLANNING	
QUALIFICATION CODE: 07BRAR 07BTAR	NQF LEVEL: 6
COURSE CODE: CEP610S	COURSE NAME: CIVIL ENGINEERING FOR PLANNING
DATE: JUNE 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

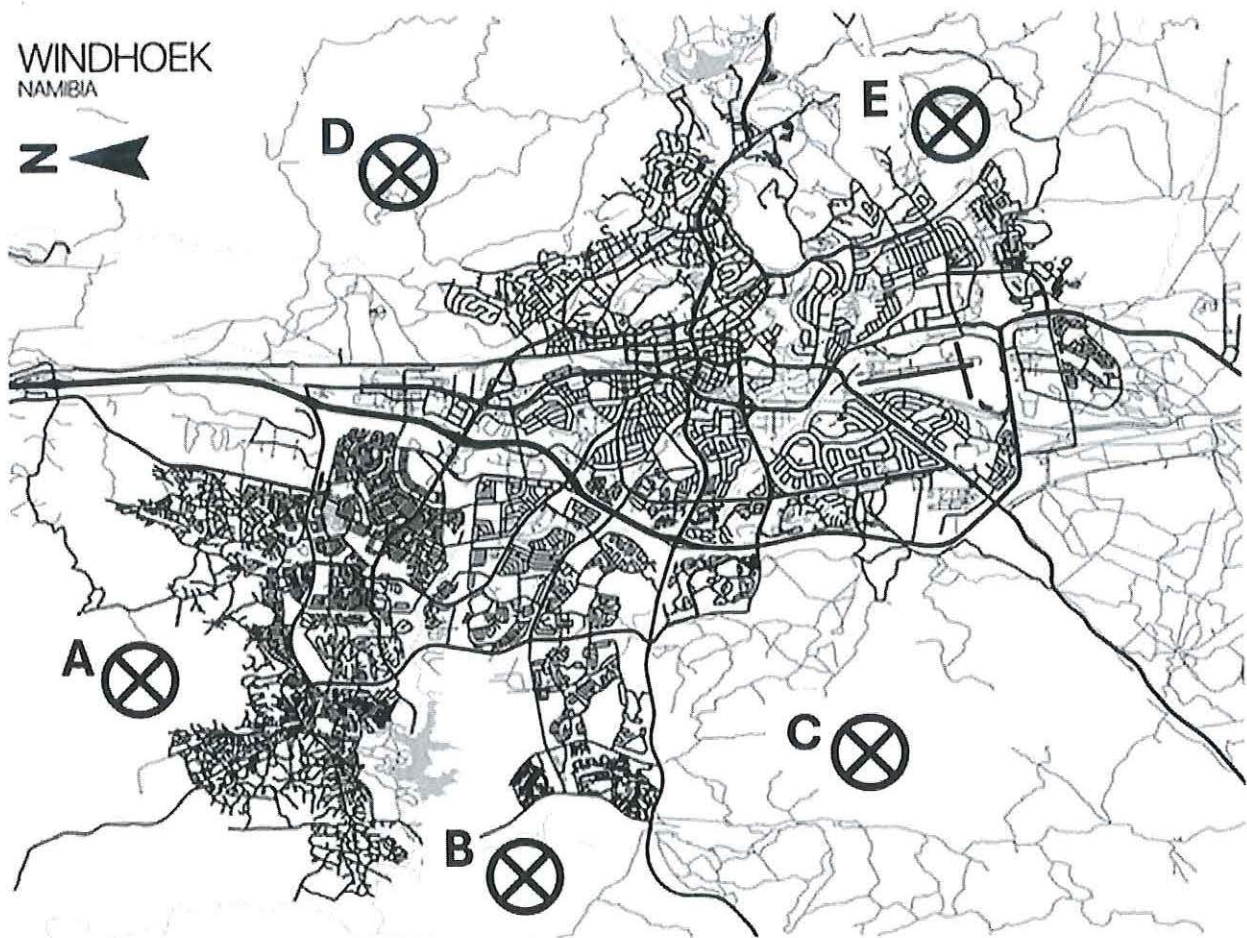
FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mr Jacques Korrubel
MODERATOR	Ms Marina Coetzee

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Questions can be answered in any sequence.3. Read all the questions carefully before answering.4. Number the answers clearly

PERMISSIBLE MATERIALS

Pen, ruler, pencil and eraser

THIS QUESTION PAPER CONSISTS OF 4 PAGES (Including this front page)

Question 1**FIGURE 1**

REFERRING TO FIGURE 1 ABOVE, answer the following questions in terms of generic principles, rules, and guidelines. There is no need to be site specific.

- (a) Which factors will influence the standards, design, and choice of either Site A or Site C as the future sewerage treatment facility for the City of Windhoek? (6)
- (b) As a spatial planner tasked to select Site B or Site D as the most suitable site for a future solid waste landfill site, describe the influencing factors which will determine the best locality for a solid waste landfill site. (6)
- (c) The city of Windhoek is planning a cluster of educational public institutions at Site A. List 8 of the benefits such an education cluster will have on the area. (8)
- (d) The City of Windhoek is planning a new residential extension at Site E.
 - (i) What would the advantages be to surface the road with a "paved" surface? (4)
 - (ii) What would be the disadvantages of keeping the roads as gravel roads? (6)

- (e) The City of Windhoek is considering the provision of “above ground” electricity services to the new residential area at Site E. Highlight the advantages and disadvantages of the “above ground” electricity distribution option. (8)
- (f) In terms of the water provision to Site E, differentiate between the “Ring main” and “Branched main” types of water reticulation in terms of its design, basic functioning, advantages, and disadvantages. (6)
- (g) In terms of the overall city road developments, differentiate between (i) T-junctions (ii) 4-way intersections and (iii) Traffic circles in terms of their efficiency and land use impact. (6)

[50]

Question 2

Governments are turning to private sector companies to install, operate, maintain, and finance the service networks.

- (a) Provide the reasons why the Government is using private companies. (5)
- (b) List the benefits for the Government. (3)

[8]

Question 3

In terms of the generic institutional issues associated with the delivery of municipal services in a local authority area, please compare the practices of “Privatisation” versus “Decentralisation”

[7]

Question 4

Specify the aspects that must be dealt with when planning a storm water drainage system on a micro level within the context of Integrated Water Management.

[6]

Question 5

Describe the bottom-up approach followed by councils, ministries, agencies, and central government during the budgeting for national capital development projects.

[5]

Question 6

Explain the following practices used by a Local Authority to make water provision to low-income communities more affordable:

(a) Cross subsidisation of the water service charges (3)

(b) A sliding scale fee structure for water service charges. (3)

[6]

Question 7

Provide detailed definitions for the following:

(a) Integrated Water Management (2)

(b) A distributor road in a residential area (2)

(c) Inter-sectoral linkages (2)

(d) 50 year floodplain (2)

(e) French drain sewer system (2)

[10]

Question 8

Produce a sketch illustrating the functional components of a Urine Diversion toilet.

[8]

END

TOTAL [100]