



**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: JULY 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY 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

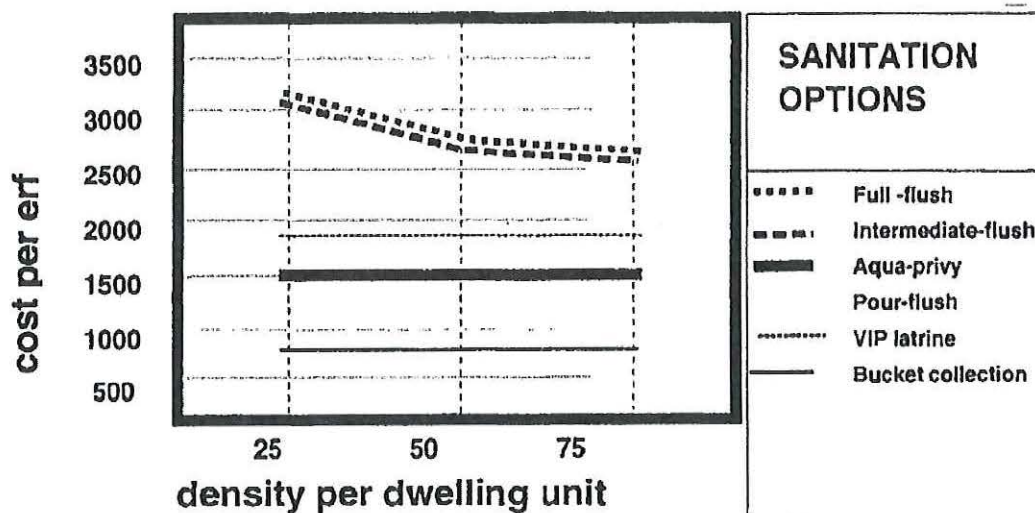
Pen, ruler, pencil and eraser

THIS QUESTION PAPER CONSISTS OF 5 PAGES (Including this front page)

Question 1

During a public meeting with inhabitants of a newly proclaimed town, you are asked to explain the difference between high and middle-order public facilities as the community members are expecting these types of public facilities to be built in their town. What would your explanation be?

[9]

Question 2

The graph above illustrates the impact of residential densities on the cost per erf to provide sanitation options to those erven. Explain why increased residential densities impact on the cost of Full Flush systems positively but have no impact on the Aqua Privy and VIP options.

[3]

Question 3

In terms of Solid Waste Management, it is generally stated that 75-90% of solid waste can be eliminated via the application of 3 sets of priorities to limit pollution and waste.

- What should the first set of priorities be to limit pollution and waste in urban areas?
- What should the last set of priorities be?
- State why private companies should be contracted to conduct solid waste collection services in urban areas.

[12]

Question 4

In table format, identify the roles and responsibilities of the following role-players in the approval of national infrastructure development projects: (a) the Ministry of Urban and Rural Development, (b) the National Planning Commission, (c) the Bank of Namibia, (d) the Ministry of Finance, (e) the Cabinet, and (f) Parliament.

[9]

Question 5

Provide detailed definitions for the following:

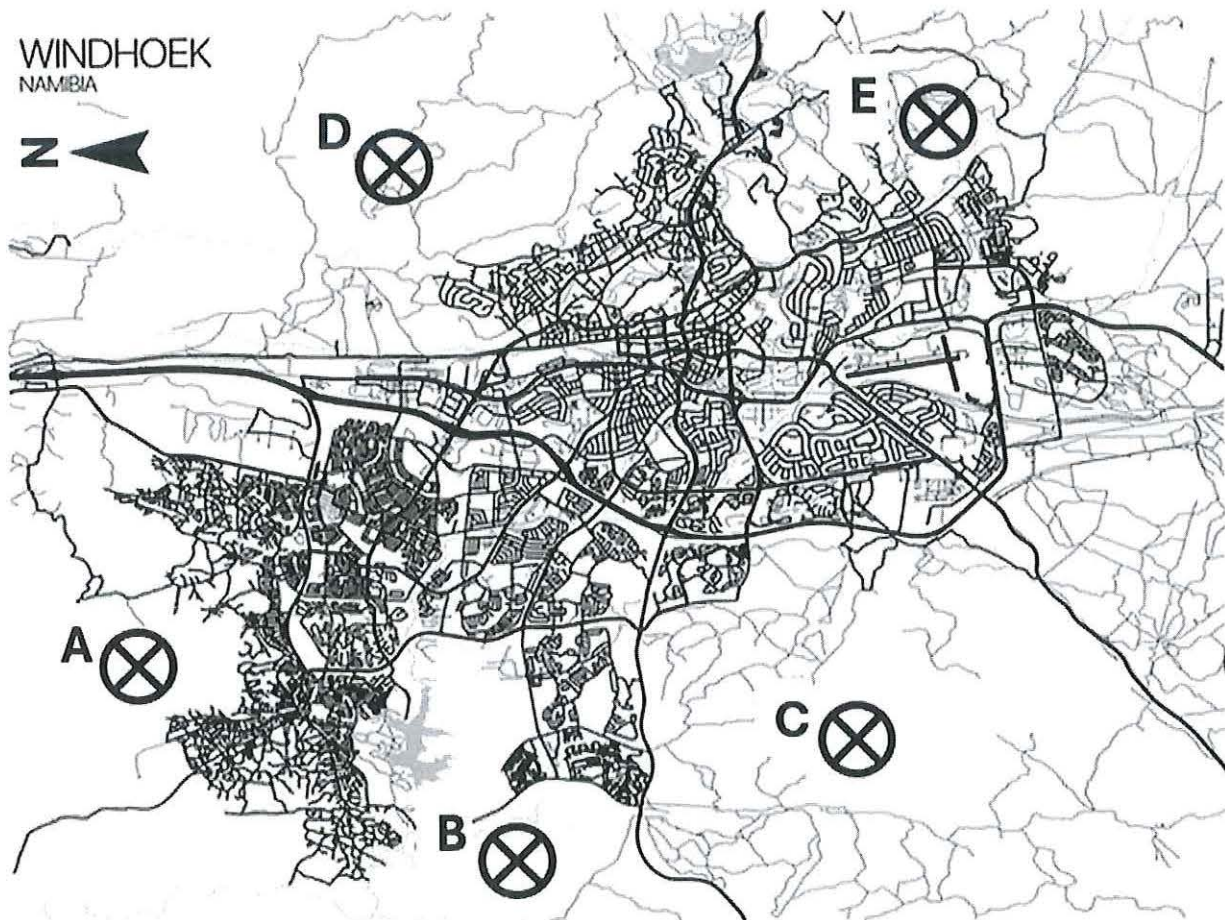
- | | |
|--|-----|
| (a) Privatisation of a service network | (2) |
| (b) Inter-sectoral linkages | (2) |
| (c) Regional Electricity Distributor | (2) |
| (d) French drain sewer system | (2) |
| (e) Integrated Water management | (2) |

[10]

Question 6

- (a) Produce a sketch illustrating the difference between a 20- and a 50-year flood plain / flood line and show on the sketch where the construction of permanent houses and structures may be allowed. (4)
- (b) Explain the influence these flood plain / lines have upon the planning standards, designs of storm water drainage systems and layout planning. (3)

[7]

Question 7**FIGURE 1**

REFERRING TO FIGURE 1 ABOVE, answer the following questions:

- (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 public institutions at Site A. Explain why it is important to plan this cluster in terms of compatibility, neutrality and incompatibility of certain public facilities and institutions. (6)

- (d) The City of Windhoek is planning a new residential extension at Site E.
- (i) What would the advantages be to surface the roads with an "Asphalt" surface? (3)
 - (ii) What would be the disadvantages of installing all electricity cables below ground? (3)
 - (iii) What will be the disadvantages of providing household water connections to each property? (3)
 - (iv) What would be the advantages of rendering a kerb site waste collection service to the neighbourhood at Site E? (3)
 - (v) What would the benefits be of providing streetlights at Site E? (3)
 - (vi) How would the site conditions at Site E influence the total servicing cost? (5)
- (e) 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)
- (f) 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 overall safety and provisions for pedestrian crossings. (6)

[50]

END**TOTAL [100]**