



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION

QUALIFICATION: BACHELOR OF TOWN AND REGIONAL PLANNING	
QUALIFICATION CODE: 07BTAR	NQF LEVEL: 7
COURSE CODE: SSP720S	COURSE NAME: SUSTAINABLE SETTLEMENT PLANNING
SESSION: NOVEMBER 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms. GB van Rooi
MODERATOR	Ms. H.T.S Kevanhu

NOTES:
1. Read the entire question paper before answering the questions 2. Ensure that you number your answers correctly 3. Please write clearly and legibly 4. You must answer all questions 5. Make sure your Student Number is on the Examination Book(s)

THE QUESTION PAPER CONSISTS OF 5 PAGES (including this front page).

Question 1

The strategically located undeveloped land between the Wernhil Shopping Mall and the Windhoek Central Station are thought to be the ideal space for the development of a Transit Oriented Node.

- (a) Drawing on the theoretical work on Transit Oriented Development (TOD), describe the characteristics this node would display once it is fully developed. (5)

Any well-functioning Transit Oriented Node will integrate non-motorised transportation (NMT).

- (b) What principles would you recommend guiding this NMT plan. (5)

[10]

Question 2

To address the ever-increasing housing needs, Urban Planners must ensure new townships are designed and proclaimed. Once these townships are developed, it does alleviate the housing need, but such developments most often result in the unintended consequence of environmental destruction.

To mitigate this environmental degradation, experts advise that a green infrastructure planning approach must be adopted. This is most often a very expensive exercise, and the municipal leaders are not in favour thereof.

- (a) Based on what you know, how would you explain the importance of adopting the green infrastructure planning approach. (5)

The 'green infrastructure approach' puts to the fore that streets ought to be 'green' to minimize the environmental impact related to transportation.

- (b) Devise a convincing argument to explain the concept of green streets to the municipal leadership. (5)

[10]

Question 3

The Namibian economy seemingly is evolving to a 'Green Economy', and such would help to solve a myriad of sustainability challenges. It is said that the current economic development trajectory is one of the main sustainability challenges.

- (a) Can you elaborate on the relationship between economic development and sustainability. (5)

In February 2020, the Namibian Cabinet by virtue of decision no: 1st CCOPP/14.02.20/007 took note and supported the High-Level Panel on the Namibian Economy presentation titled “**New Green Economy 2030 Program**” as one of the interventions to propel economic growth in Namibia.

- (b) Explain to the Mayor of Lüderitz-Bucht how the “New Green Economy 2030 Program” could benefit the harbour town. (5)

[10]

Question 4

The Sustainable Development Goal No. 11 calls on nation states to “Make cities and human settlements inclusive, safe, resilient and sustainable.”

Prepare an in-depth advisory note that details how you as an urban planner would integrate SDG 11 into urban planning interventions, necessary for the for the upgrade of Orutjanda or Tatamutsi, or any other informal settlement in Namibia.

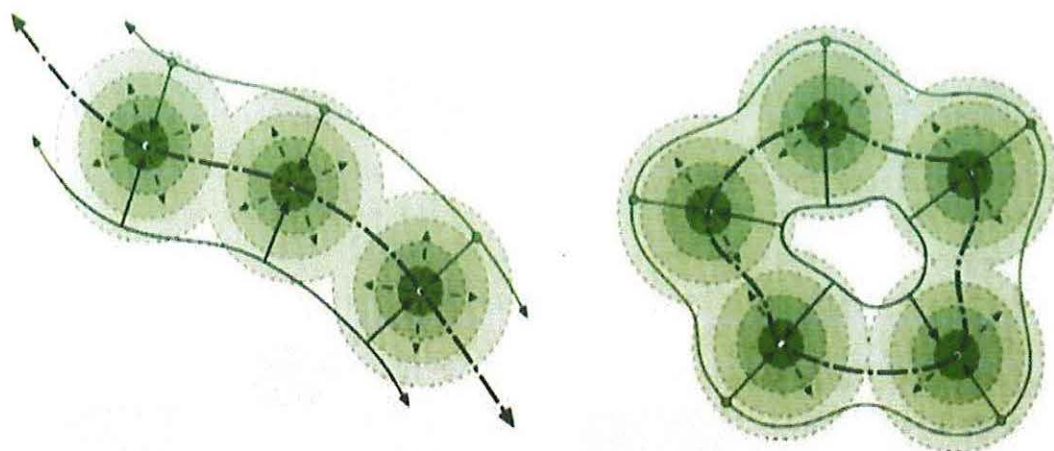
[10]

Question 5

Academic research proved that the most sustainable urban form is that of a compact city. Such research has also concluded that compact cities are made up of distinct nodes of intense activity and high-density residential development and such nodes are linked by activity corridors. This concept is depicted in Figure 1.

- (a) Apply this theoretical knowledge and the concept illustrated in Figure 1 to indicate how it is or could be applicable in Windhoek. Refer to well-functioning nodes or nodes within Windhoek that could function as theorised. (5)

Figure 1. Compact City Model



- (b) What are the other methods of incremental densification that could be pursued to ensure gradual densification of older established sprawling townships? Take inspiration from the Cape Town Densification Strategy to guide your answer. (5)

[10]

Question 6

Lüderitz-Bucht has successfully engaged in 'brownfield' development' which have resulted in the positive transformation of a once blighted area of the town.

- (a) Discuss the term urban blight by referring to the Old Power Station of Lüderitz-Bucht. (5)

Urban Regeneration is well complimented by the adoption of a Zoning Scheme that accommodates Mixed Land Use as a zoning.

- (b) Draw on the concept of Mixed Land Use as contained within the draft Windhoek Zoning Scheme of 2024 to inform a similar revision of the Lüderitz Zoning Scheme. (5)

[10]

Question 7

Climate change is one of the most pressing issues of our time, threatening ecosystems, economies, and communities worldwide. At the same time, we're also on the precipice of a big data revolution, ushered in by AI technology.

Big data refers to the vast volumes of data generated from various sources at high velocity and with great variety. It encompasses everything from satellite imagery and sensor data to social media activity and weather forecasts. Analyzing and interpreting this data is crucial for understanding and addressing climate change.

- (a) How can Big Data be applied to inform climate change initiatives? (5)

This Big Data revolution and complimentary AI technology are also applied to make the Smart City concept come to life. A Smart City is a municipality that uses information and communication technologies (ICT) to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare.

Implementing Smart City Initiative however can be challenging.

- (b) Point out some Smart City Challenges and Concerns? (5)

[10]

Question 8

The United Nations Inter-Governmental Panel on Climate Change assessment report for 2018 confirmed that the gradual warming of the earth over the last three decades is projected at 2 degrees Celsius, leading to serious implications for southern African countries. The report singled out Namibia and Botswana, as two countries that will face severe water stress as a result of this impact.

The City of Windhoek has formulated an Integrated Climate Change Strategy and Action Plan to address climate change.

- (a) Break down the aspects that is covered in the strategy and action plan. (5)

Namibia is a signatory to the Paris Agreement on Climate Change Mitigation and Adaptation.

- (b) Can you assess the importance of this treaty? (5)

[10]

Question 9

Marine Spatial Planning is a novel concept in Namibia. However, without such the Blue Economy will suffer greatly. Say you are employed as a Marine Spatial Planner in the Ministry of Fisheries and have to raise awareness on Marine Spatial Planning.

- (a) Explain the Marine Spatial Planning Concept to residents of Walvis Bay. (5)

The world's oceans are of utmost importance in the functioning of the Earth system. The oceans however are dramatically affected by increased CO² emissions, which lead, through the effects of warming and thermal expansion, to a rise in sea levels, as well as to ocean acidification.

Walvis Bay must thus ensure that ocean acidification is eliminated to ensure the long-term sustainability of its fishing industry.

- (b) What reason would you give to ensure all Marine Based Industries play their part in curbing ocean acidification? (5)

[10]

Question 10

Climate change exacerbates biodiversity loss. You must address this challenge by crafting a Biodiversity Preservation Policy for the City of Windhoek.

- (a) Construct a valid problem statement that details the concept of biodiversity loss. (5)

- (b) Recall at least two SDG's and briefly describe components thereof that speak to a healthy Urban ecosystem. (5)

[10]

TOTAL = 100