



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT  
DEPARTMENT OF ARCHITECTURE, PLANNING AND CONSTRUCTION**

<b>QUALIFICATION: BACHELOR OF REGIONAL AND RURAL DEVELOPMENT</b>					
<b>QUALIFICATION CODE:</b>	<b>07BRAR</b>	<b>LEVEL:</b>	<b>7</b>	<b>CREDITS:</b>	<b>12</b>
<b>COURSE CODE:</b>	<b>NRS711S</b>	<b>COURSE NAME:</b>	<b>NATURAL RESOURCES MANAGEMENT AND SUSTAINABLE DEVELOPMENT</b>		
<b>DATE:</b>	<b>JUNE 2024</b>	<b>PAPER:</b>	<b>THEORY</b>		
<b>DURATION:</b>	<b>3 HOURS</b>	<b>MARKS:</b>	<b>100</b>		

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
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<b>INSTRUCTIONS</b>	
1. Answer ALL the questions.	
2. Read the entire question paper before answering the questions.	
3. Questions may be answered in any sequence, provided that they are numbered clearly and correctly.	
4. Write clearly and legibly.	

***PERMISSIBLE MATERIALS***

Pen, ruler, pencil and eraser

**THIS QUESTION PAPER CONSISTS OF 12 QUESTIONS AND 8 PAGES (including this front page)**

**Question 1:**

Select the single *CORRECT* answer to each of the following questions. Just write down the number, e.g. (a) D.

- (a) Which one of the following does *not* fit within the concept of sustainable development?
- A Inter-generational equity
  - B Living beyond environmental limits
  - C Democratic, transparent, inclusive and accountable governance
  - D Use of renewable resources within their regenerative capacity
  - E Decision-making based on robust, credible scientific evidence (1)
- (b) One outcome of the first 'Rio Conference' in 1992 was the adoption of ...
- A the Paris Agreement
  - B the UN Agenda 2030
  - C the Helsinki Rules
  - D the Vienna Convention and Montreal Protocol
  - E the UN Framework Convention on Climate Change (1)
- (c) The UN 2030 Agenda for Sustainable Development ...
- A is a programme with development targets to reach by 2015
  - B encompasses 17 Sustainable Development Goals (SDGs)
  - C is a blueprint for industrialisation
  - D is a framework for sustainable development during the 21<sup>st</sup> Century
  - E is a legally binding treaty to address ecosystem degradation (1)
- (d) Anthroponoses are diseases that ...
- A are caused by modern diets that are too rich in animal proteins
  - B are endemic to animal populations
  - C are only found in overcrowded zoos
  - D circulate within the human population and can jump species to animals
  - E are transmitted from animals to humans (1)
- (e) Which one is *not* a target of SDG 3 (Good Health and Well-being)?
- A Decrease in injuries and deaths from traffic accidents
  - B Access to healthcare services, medicines and vaccines
  - C Decrease in illnesses and deaths from environmental pollution and hazardous chemicals
  - D Prevention and treatment of drug and alcohol abuse
  - E Population reduction by imposing a global one-child-per-family policy (1)

- (f) Delimitation of territorial waters, exclusive economic zones, continental shelves, etc., is under the authority of the ....
- A Namibian Ministry of Fisheries and Marine Resources
  - B UN Convention on the Law of the Sea
  - C International Seabed Authority
  - D UN Deepsea Mining Authority
  - E MARPOL
- (1)
- (g) Local horticultural production in Namibia is supported by ...
- A transport subsidies
  - B import restrictions on some fruits and vegetables at certain times of the year when there is sufficient local supply
  - C export subsidies
  - D plans to dismantle the veterinary cordon fence ('Red Line')
  - E infant-industry protection for the chicken industry
- (1)
- (h) Nationally Determined Contributions is a term to describe ....
- A compulsory emission reduction commitments under the Kyoto Protocol
  - B in-kind contributions from developing countries to leverage adaptation funding
  - C financial commitments by developed countries to the Green Climate Fund
  - D voluntary commitments, identified by countries themselves, to reduce their greenhouse gas emissions
  - E the greenhouse gasses emitted by each country, as a percentage of total global emissions
- (1)
- (i) The idea that a developing country can bypass outdated, inefficient or polluting technologies and move directly to efficient, cost-effective and green technologies is known as ...
- A the Fourth Industrial Revolution
  - B leapfrogging
  - C the lifecycle approach
  - D sustainability
  - E the circular economy
- (1)

- (j) The Intergovernmental Panel on Climate Change ...
- A extracts factual information on climate change from scientific publications to inform and advise policymakers
  - B drafts policies to be approved by the UNFCCC COP
  - C arranges climate financing for adaptation projects of developing countries
  - D prescribes to the UNFCCC Conference of Parties how they must implement the articles of the Convention
  - E is a group of scientists employed by the World Meteorological Organisation (1)

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[10]

**Question 2:**

- (a) Compile your own comprehensive definition of sustainable development, including clear descriptions of its three pillars. (4)
- (b) Briefly explain the 'Planetary Boundaries' concept. (4)

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[8]

**Question 3:**

- (a) Discuss the impacts that infrastructure improvements, such as roads and electricity, have on poverty reduction in rural areas. (4)
- (b) What can the Namibian government do to encourage entrepreneurship as a way to reduce poverty? (3)
- (c) How can sustainable agricultural practices contribute to poverty reduction in developing countries? (4)

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[11]

**Question 4:**

- (a) Reflect on the need to maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals, and their related wild species, as expressed in target 2.5 of Sustainable Development Goal 2 (No Hunger). (5)

- (b) List four (4) of the environmental challenges to food production that smallholder farmers in northern Namibia are grappling with. (4)

[9]

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**Question 5:**

Discuss approaches (strategies) that would enhance sustainable consumption and production globally. (Hint: Use the targets of SDG 12 (Responsible Consumption and Production) as a point of departure) (6)

[6]

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**Question 6:**

- (a) How can town planning contribute to the environmental, social and economic sustainability of cities? (Hint: Consider the aspects that make a city environmentally sustainable, livable, economically vibrant, socially equitable, etc.) (6)
- (b) Discuss the co-benefits that green public open spaces in a city have for both the environment and citizens. Be specific. (4)

[10]

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**Question 7:**

Explore the links between human health issues and the pressures that human activities put on wildlife and ecosystems. Use very specific examples to support your arguments. (6)

[6]

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**Question 8:**

What has Namibia done at policy and institutional level to prepare for climate change and to meet commitments under international agreements? (5)

[5]

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**Question 9:**

- (a) What role do oceans play in regulating the Earth's climate? (3)
- (b) Why is reducing marine pollution crucial for sustainable development? (2)
- (c) What is unique about the conservation status of the Namibian coastline? (1)
- (d) In what ways does intensive agriculture affect marine ecosystems? (2)
- [8]**
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**Question 10:**

- (a) How do the efforts to protect biodiversity contribute to overall sustainable development, as envisioned by SDG 15 (Life on Land)? (4)
- (b) What is the significance of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) for SDG 15? (2)
- [6]**
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**Question 11:**

- (a) Specify four (4) stakeholders in the Namibian electricity supply industry and explain their respective roles.  
(4 marks for stakeholders, 4 marks for their roles) (8)
- (b) Namibians are using solar energy in at least three (3) different ways as an energy source. Elaborate on this statement. (3)
- [11]**
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**Question 12**

Match each *term* in Column 1 with the appropriate *description* in Column 2. Write down only the *capital letter* from Column 2 next to the *small letter* from Column 1, for example (a) D.

<u>Column 1</u>	<u>Column 2</u>
(a) Natality	A Weight loss due to malnutrition
(b) Wasting	B Exponential increase in resource use and waste generation since the Industrial Revolution
(c) Human Development Index	C Namibia’s hydroelectric power station
(d) Great Acceleration	D Inadequate linear growth due to malnutrition
(e) Ruacana	E UN agency dealing with global health issues
(f) Deceleration phase of population growth	F A composite measure of life expectancy, education and gross national income
(g) International Seabed Authority	G Immigration rate of a population
(h) Biocapacity	H The move from fossil fuels to renewable energy sources
(i) UNEP	I The variety of lifeforms on Earth
(j) The Green Revolution	J UN agency dealing with cities and human habitation
	K Linear increase in fertilizer production, greenhouse gas emissions, and global trade since the introduction of steam- and petroleum-driven machinery
	L Population growth is suppressed as intra-species competition increases and resources become more limited
	M Vitamin deficiencies due to malnutrition
	N The number of people that Earth can support indefinitely without deterioration of ecosystem functioning

- O The massive increase in food production during the 1950s to 1970s
- P UN agency dealing with environmental issues
- Q A measure of income or wealth inequality between the richest and poorest people in a country
- R Namibia's largest solar power station
- S Populations crash catastrophically when they run out of resources
- T Regulator of offshore mineral exploration and mining, beyond the limits of national jurisdictions
- U Death rate of a population
- V Birth rate of a population
- W The growth of the global environmental movement
- X UN agency responsible for regulating shipping (10)

[10]

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**TOTAL: 100**

