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		
QUALIFICATION CODE:	07BRAR	**LEVEL:** 6	**CREDITS:** 12
COURSE CODE:	IEM621S	**COURSE NAME:**	INTEGRATED ENVIRONMENTAL MANAGEMENT
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DURATION:	3 HOURS	**MARKS:**	100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
1. Read and answer all the questions carefully. 2. Number the answers clearly.

THIS QUESTION PAPER CONSISTS OF 8 PAGES (Including this front page)

Question 1:

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

(a) What is the overarching goal of integrated environmental management (IEM)?
- A reducing environmental awareness
- B minimising environmental regulations
- C maximising economic profits
- D conserving the environment at the cost of human development
- E achieving sustainable development (1)

(b) In the context of environmental indicators, what does the "pressure-state-response" framework assess?
- A the relationship between air pressure and atmospheric conditions
- B changes in environmental policy
- C economic pressures on ecosystems and the effectiveness of interventions
- D how governments responds to international political pressure
- E the impact of climate change on air pressure (1)

(c) Which of the following is a key benefit of regular state of the environment reporting for decision-makers and policymakers?
- A concealing unfavourable environmental trends
- B reducing transparency in environmental management
- C checking compliance with environmental regulations
- D identifying emerging environmental challenges
- E exaggerating the achievements of government agencies (1)

(d) The main objective of mandatory environmental impact assessments (EIAs) for listed activities in Namibia is to ...
- A lengthen the development process
- B ensure that all development activities are approved without delays
- C stop development that encounter any public resistance
- D ensure that decision-making processes are fully controlled by government
- E assess and mitigate potential adverse environmental impacts (1)

(e) What is the primary objective of the scoping process in EIA?
- A excluding stakeholders from the decision-making process
- B identifying and defining the boundaries of the EIA study
- C studying individual environmental impacts in great detail
- D hiding project details from the Environmental Commissioner

E determining the financial viability of a project (1)

(f) Which phase of EIA involves characterising and evaluating the significance and magnitude of identified impacts?

A screening
B scoping
C impact analysis
D mitigation planning
E review (1)

(g) Which of the following is *not* an example of a mitigation measure in EIA?

A re-routing a road to avoid sensitive habitats
B implementing pollution control technologies in industrial processes
C compensating a community for loss of land
D conducting public consultation after project implementation
E restoring /rehabilitating affected ecosystems (1)

(h) What does the term "upcycling" refer to in the circular economy?

A repairing broken appliances for reuse
B reusing disposable containers until they fall apart
C recycling materials to a higher-quality product
D recovering energy from products through incineration
E sending obsolete products back to the manufacturer for scavenging reusable components (1)

(i) In life-cycle assessment, what is meant by "cradle-to-grave" analysis?

A excluding the extraction of raw materials phase from assessment
B assessing only the manufacturing phase of a product
C evaluating all the environmental impacts, from raw material extraction to disposal
D excluding the disposal phase from assessment
E analysing product performance while it is in use (1)

(j) Which of the following best characterises "primary succession"?

A it occurs following a mild disturbance such as grazing or a veld fire
B it starts with well-established, fertile soil containing seeds
C it starts in agricultural fields that are left fallow
D it involves the re-colonisation of an area disturbed to a degraded state – often without soil or macroscopic life
E it starts with the introduction of climax species (1)

[10]

Question 2:

For each of the following scenarios, select the most appropriate tool from the "integrated environmental management toolbox" and explain your choice.
(e.g., if the scenario is about identifying mitigation actions for a project, the appropriate tool will be an environmental impact assessment):

(a) The Ministry of Labour wants to know what the nation-wide environmental and socio-economic effects will be if they introduce programmes for integrating informal economies into the formal economic structures of Namibia.

(2)

(b) Uis Mine re-contours its waste dumps to resemble the surrounding landscape, covers it with topsoil and replants indigenous plants. The intention is to regain a considerable amount of ecosystem functionality, although not to the original, pre-mining state.

(2)

(c) Railway construction between Grootfontein and Katima Mulio is visited by inspectors from the Department of Environmental Affairs to verify compliance with its environmental clearance certificate conditions.

(2)

[6]

Question 3:

As a development planner in a regional authority, you may be required to apply the provisions of the Namibian Environmental Management Act and its Regulations.

a) Highlight any four (4) objectives of this law.

(4)

(b) Compare baseline and compliance monitoring to distinguish key differences and give relevant examples, respectively.

(4)

[8]

Question 4:

The Namibian environmental impact assessment (EIA) process requires a sequence of steps, including the scoping and assessment reports. Describe the contents of the EIA scoping report.

(10)

[10]

Question 5:

'We can only manage things that we measure'. Provide arguments to support this statement with reference to the purpose of environmental indicators. Write full sentences, not only bullet points or phrases.

(7)

[7]

Question 6:

The main aim of engaging stakeholders is to improve communication in the interest of facilitating better decision-making and more sustainable development.

(a) Elaborate any five principles of stakeholder engagement in environmental management. Write full sentences, not only bullet points or phrases. (10)

(b) Compare the two levels of stakeholder engagement "inform" and "involve" concerning the extent to which project proponents collaborate with stakeholders.

(4)

[14]

Question 7:

(a) Discuss the benefits of *product certification*. (5)

(b) How can Namibia capitalise on ecolabelling?

(5)

[10]

Question 8:

(a) Explain the forces driving the implementation of life cycle assessment of a product. (5)

(b) Compare *reclamation and rehabilitation* in the context of integrated environmental management, by highlighting their respective objectives and expected outcomes. (6)

(c) List four (4) practical techniques with which humans can assist the recovery of a damaged ecosystem. (4)

[15]

Question 9:

A key objective of a *State of the Environment Report (SOER)* is to capture and present, in as accurate and useful a format as practicable, key information on the state of the 'environment'.

(a) Identify the information types contained in such a report. (5)

Strategic environmental assessment (SEA) is critical to help achieve sustainable development in public planning and policy making.

(b) Discuss any three key differences between environmental impact assessments (EIAs) and strategic environmental assessments (SEAs). (6)

[11]

Question 10:

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.

Column 1		Column 2	
(a)	Empowerment	A	An ecosystem from which all macroscopic life had

(b)	Environmental management plan
(c)	ISO14001
(d)	Degraded ecosystem
(e)	Precautionary principle
(f)	Environmental audit
(g)	Extent of impact
(h)	Programme
(i)	Cradle-to-Grave

been removed

B A process of systematically measuring environmental indicators over time

C The size of the area influenced by a particular effect of a project

D A term associated with the linear economy

E A portfolio of multiple projects that are managed and coordinated as one unit

F Internationally recognized standards for environmental management systems

G The idea that an action should not be taken if the consequences are uncertain and potentially dangerous

H Die basic model of environmental management systems

I An ecosystem that has undergone subtle or gradual changes

J A model used for stakeholder engagement

K A standard prescribed by the Environmental Management Act

L A term associated with the circular economy

M A review process whereby an organisation's environmental performance is tested against its environmental policies and objectives, sometimes resulting in certification

N A process of systematically observing and/or measuring environmental parameters

O The level of stakeholders engagement that allows shared decision-making

P A formalised, high-level statement that expresses an organisation's environmental values and commitments

Q How long a particular effect of a project will last

R A planned set of interrelated tasks to be executed over a fixed period, a defined location, scope and limited resources, to achieve specific tangible outputs

S The level of stakeholder engagement that invites comments and feedback from interested and affected parties

T A detailed document that outlines the strategies, actions and measures that an organisation intends to take to achieve its environmental goals

U The care an organisation should take to identify hidden risks and liabilities before entering into an agreement or a transaction with another party (9)

[9]

TOTAL: 100