



## **FACULTY OF SCIENCE**

### **DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL MANAGEMENT & ENERGY STUDIES**

<b>MODULE</b>	<b>ENM3B</b> ENVIRONMENTAL MANAGEMENT
<b>CAMPUS</b>	<b>APK</b>
<b>EXAM</b>	<b>NOVEMBER 2017</b>

**DATE**            **2017.16.11**

**SESSION**   **12:30 – 15:30**

**ASSESSOR(S)**

**DR K. YESSOUFOU**  
**MRS L. MODLEY**

**EXTERNAL MODERATOR**

**DR IT. RAMPEDI**

**DURATION**    **3 HOURS**

**MARKS**    **150**

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**NUMBER OF PAGES: 3 PAGES**

#### **INSTRUCTIONS:**

- 1.      Answer ALL OF THE QUESTIONS**
- 2.      Number your answers clearly.**
- 3.      Answer each Section in a separate book.**
- 4.      Please note there are THREE sections.**
- 5.      Please note there are choices in Section C.**

## SECTION A (Dr Yessoufou)

### QUESTION 1

Biodiversity and the EIA:  
Health Impact Assessment:

**SUB TOTAL [50]**

## SECTION B (Mrs Modley)

### QUESTION 2

Environmental Monitoring

#### **AN OVERVIEW OF ENVIRONMENTAL MONITORING AND ITS SIGNIFICANCE IN RESOURCE AND ENVIRONMENTAL MANAGEMENT**

*Sarah Weston (2011)*

*Environmental monitoring can be defined as the systematic sampling of air, water, soil, and biota in order to observe and study the environment, as well as to derive knowledge from this process (Artiola et al., 2004; Wiersma, 2004). Monitoring can be conducted for a number of purposes, including to establish environmental “baselines, trends, and cumulative effects” (Mitchell, 2002, pg. 318), to test environmental modeling processes, to educate the public about environmental conditions, to inform policy design and decision-making, to ensure compliance with environmental regulations, to assess the effects of anthropogenic influences, or to conduct an inventory of natural resources (Mitchell, 2002). Environmental monitoring programs can vary significantly in the scale of their spatial and temporal boundaries. For example, an endangered fish in a small stream and the viability of its short-term fate will require monitoring on short and localized temporal and spatial scales, while the management of natural resources that span a nation will require monitoring programs that are much broader in scale (Artiola et al., 2004). Monitoring programs can vary significantly in scope, ranging from communitybased monitoring on a local scale, to large-scale collaborative global monitoring programs such as those focused on climate change (Conrad & Daoust, 2008; Lovett et al., 2007). Environmental monitoring is conducted by stewardship organizations,*

*concerned individuals, nongovernmental environmental organizations, private consulting firms, and government agencies.*

2.1) Name 2 benefits of Environmental monitoring and briefly discuss methods you include in order to develop a successful monitoring plan? [15]

2.2) Distinguish between direct, indirect and cumulative impacts. [10]

*Biomonitoring of aquatic communities play an important role in maintaining or restoring the quality of our water resources, it usually forms part of the environmental monitoring programs for developments located in close proximity to water resources. Answer the following questions based on Biomonitoring in South Africa.*

2.3) Give 5 examples of how biomonitoring is conducted in South Africa [15]

2.4) What are bio-indicators? Give a brief description of 3 bio-indicators [10]

**SUB TOTAL [50]**

### **SECTION C (Guest Lecturers)**

#### *Social Impact Assessment*

3.1) Describe the methodology followed to do a social impact assessment and describe the importance of each step [15]

3.2) List and briefly explain list 5 social impacts [10]

#### *Effectiveness and quality of Environmental Impact Assessment*

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