



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2018/ 2019

COURSE NO: ES 373

COURSE NAME: ENVIRONMENTAL IMPACT ASSESSMENT AND
AUDIT

CLASS: ES III

TIME: 3 HOURS

Name: _____ Index Number: _____

ATTEMPT ALL QUESTIONS

Question One

An investor wants to put up an industrial Plant for the manufacture of paper and its derivatives for both Local and external market. The investor intends to establish the paper manufacturing mill in a relatively wet and forested upper part of Tarkwa. Apart from the paper mill, the investor will also provide infrastructure and social amenities in Tarkwa. In view of the socio-economic and bio-physical environmental implications that may result due to the proposal, there has been public debate particularly on the loss of habitat/biodiversity and competition for scarce water resources in Tarkwa. Assuming your consultancy firm has won a contract to undertake Environmental Impact Assessment (EIA) study on this proposed project;

- a) Discuss the logical steps on the EIA process that your study team is likely to follow in order to achieve the task assigned to you. Justify the formation of the interdisciplinary Team for this EIA study. **(4 marks)**
- b) The extent of effect of a project depends on the Nature, Scale and Location of the project. Comment on these factors in relation to Impact Assessment. **(3 marks)**
- c) Define Public Hearing and state with reason the stage(s) in the EIA process where it is conducted. **(2.5 marks)**
- d) State the criteria or stages for identification of Significant impacts. **(1.5 marks)**

e) The Table below shows the specimens collected from Tarkwa Forest

Order	Description	Number of individuals
Hymenoptera (wasp)	Black	14
Hymenoptera (wasp)	Purple	24
Hymenoptera (bee)	Striped	10
Orthopteran (grasshopper)	Green with red legs	12
Orthopteran (grasshopper)	Brown with a yellow stripe	17
Lepidoptera (butterfly)	Large, blue	9
Lepidoptera	Small, blue	3

From the table calculate;

- i. Shannon index **(2 marks)**
- ii. Simpson Index **(2 marks)**

Question Two

- a) What is health impact assessment? **(1 mark)**
- b) State five (5) reasons for undertaking health impacts? **(2.5 marks)**
- c) When is an HIA conducted as a
 - i. Part of EIA? **(1 mark)**
 - ii. Stand-alone study? **(1 mark)**
- d) An Area Health Service is approached by a local community advisory group to comment on a draft proposal of a wind-farm. A manager is assigned the task and thinks an HIA may be a useful process to help understand the potential positives and negatives of the proposal in relation to health. Initially, the manager develops an in-house team to undertake pre-screening on the proposal, prior to a more formal screening meeting.
 - i. List the teams the manager will consider in the formation of the pre-screening committee **(2 marks)**
 - ii. State and explain four possible outcomes from the screen meeting. **(2 marks)**
 - ii. What pre-screening activities are undertaken at a pre-screening meeting? **(1.5 marks)**
- e) Four levels of HIA are generally conducted; List and state two (2) differences among them. **(4 marks)**

Question Three

- a) What is Ecological Risk Assessment (ERA)? **(1 mark)**
- b) What two (2) major elements are used to characterize the Ecological Risk Assessment process? **(1 mark)**
- e) i. Construct the framework for Ecological Risk Assessment Process **(1 mark)**
 - ii. Explain the following **(3 marks)**
 - Assessment endpoint
 - Conceptual Model
 - Analysis plan

Question Four

- a) What is environmental monitoring? **(1 mark)**
- b) Differentiate among baseline monitoring, impact monitoring and compliance monitoring. **(3 marks)**
- c) What are the eight components of environmental monitoring? **(4 marks)**
- d) Five monitoring parameters are considered in environmental monitoring. What are they? **(2.5 marks)**
- e) What are the five challenges faced in environmental monitoring? **(2.5 marks)**

Question Five

- a) What is environmental audit? **(1 mark)**
- b) List six types of environmental audits. **(3 marks)**
- c) What is AKOBEN? **(1 mark)**
- d) What is the significance of the ADINKRA symbol used in AKOBEN? **(1 mark)**
- e) Explain the each colour code used during AKOBEN rating. **(3 marks)**
- f) What are the goals of disclosure in AKOBEN rating? **(2 marks)**

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