**UNIVERSITY OF SWAZILAND**

**FACULTY OF HEALTH SCIENCES**

**DEPARTMENT OF ENVIRONMENTAL HEALTH SCIENCE**

**MAIN EXAMINATION [MAY 2014]**

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**COURSE TITTLE - ENVIRONMENTAL ASSESSMENT**
**COURSE CODE - EHS 551**
**ACADEMIC YEAR - 2013/2014**
**TIME ALLOCATED - 2 HOURS**

**INSTRUCTIONS**

1. **DO NOT OPEN THIS EXAMINATION PAPER UNTIL YOU ARE INSTRUCTED TO DO SO BY THE INVIGILATOR**

2. **ANSWER ANY THREE QUESTIONS 25 MARKS EACH**

3. **BEGIN YOUR ANSWERS TO EACH QUESTION ON A NEW PAGE OF THE ANSWER BOOKLET. ENSURE THAT YOU HAVE NUMBERED YOUR PAGES CORRECTLY.**

4. **MARKS WILL BE DEDUCTED FOR UNTIDY WORK**

**QUESTION 1 : 25 MARKS**

There is widespread recognition that human activities are changing the global climate system, thereby contributing to Climate Change and other significant environmental problems.

1. Identify and describe three ways in which industrial operations pollute the environment [6]
2. What is meant by pollutant fate [2]
3. Distinguish between organic and inorganic pollutants and give one example of each pollutant [4]
4. Some pollutants have the characteristic of bioaccumulation in systems. With the help of an example describe the concept of chemical bioaccumulation in organisms [4]
5. Describe industrial symbiosis as an innovative approach to pollution control and provide two advantages of the approach [5]
6. State two pieces of legislation in Swaziland aimed at pollution control [2]
7. In what ways does the cogeneration technology benefit the environment? [2]

**QUESTION 2 : 25 MARKS**

1. Assuming that you are an Environment Officer of company Z and part of your duties is to ensure that the company complies with the statutory environmental requirements:
    a. Identify and describe **two** measures you would suggest or implement for controlling atmospheric pollution from the company [4]
    b. Differentiate between waste and pollution [2]
    c. What **two** parameters are used to measure or monitor chemical pollutants and bacterial contamination [2]
2. A petrochemical (diesel) spillage has been identified in the company premises
    a. In what environmental sound way would you clean up the spill from concrete surfaces [2]
    b. Describe a quicker and safer remediation method you would employ if the contamination has found its way to about 30cm in the soil [4]
    c. State **three** advantages of phytoremediation [3]
3. Define the following pollution control strategies
    a. Pollution tax [2]
    b. Carbon foot print [2]
4. Describe how agricultural activities pollute the environment [4]

**QUESTION 3 : 25 MARKS**

1. What do you understand by the concept of Sustainable Development [2]
2. Define the following important aspects of Sustainable Development
    a. Intra and inter generational equity [2]
    b. Sustainability [2]
3. The United Nations Commission on Environment and Development (UNCED) identified core principles of sustainable development. Indentify and explain four of the principles [8]
4. What is meant by intangible natural resources [2]
5. With the help of an example explain the challenge posed by poverty in achieving sustainable development [5]
6. Appropriate Policy and legislative framework can assist in the quest for sustainable development. How ?[4]

**QUESTION 4 : 25 MARKS**

1. The natural environment plays a fundamental role in the country's economic development. How? [3]
2. What is meant by intrinsic value of the environment [2]
3. With the help of a diagram explain the **KUZNETS CURVE** theory on economic growth and the environment [5]
4. Describe how economic development can lead to serious environmental degradation if the principles of sustainable development are not observed [5]
5. Environmental inspectors have come across dead fish in one of the major rivers in Swaziland. This is attributed to pollution by one of the industries. You are asked to assist the inspectors to find the culprit.
    a. Describe briefly the steps you would undertake to find the polluter [5]
    b. What advice would you give to the fishing community in that area and why? [2]
    c. Which environmental laws the company (culprit) has violated by the pollution incidence [3]