



# **MASENO UNIVERSITY**

## **UNIVERSITY EXAMINATIONS 2015/2016**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF MASTER OF SCIENCE IN ENVIRONMENTAL  
SCIENCE**

**CITY CAMPUS**

**NES 829: ECONOMIC ANALYSIS FOR ENVIRONMENTAL  
DECISION MAKING**

Date: 25<sup>th</sup> April, 2016

Time: 9.00 - 12.00pm

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### **INSTRUCTIONS:**

- Answer ANY FOUR Questions.

1. By observing consumer behaviour through price variation, one can hypothetically impute values for non market environmental goods and services.
  - (a) Identify a suitable environmental valuation method and explain how you would determine such a goods' total value all based on individuals preferences. [5 mks]
  - (b) Tabulate the Willingness To Pay of individual preferences of (a) above and determine the total WTP, total price paid and total consumer surplus. [5 mks]
  - (c) Give a graphical representation of the information in (b) above. [5 mks]
  
2. Elucidate the causes of market failure. [15 mks]
  
3. (a) Define Pareto optimality and determine conditions necessary for achieving it. [8 mks]
- (b) Explain and depict graphically how an optimal environmental tax works. [7 mks]
  
4. A paper mill located upstream and discharges waste water into a nearby river is a good example of a single polluter with multiple damaged parties. Explain;
  - (a) The divergence between marginal private benefits and marginal extended benefits that the producer and the society enjoy. [5 mks]
  - (b) Marginal private costs and marginal extended costs that accrue to the society [5 mks]
  - (c) Represent graphically the scenarios in (a) and (b) above. [5 mks]
  
5. Markets are efficient users of environmental resources. Discuss [15 mks]
  
6. Analyze the advantages and limitations of the Benefit Transfer Method of environmental valuation. [15 mks]