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## TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES  
DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES  
**UNIVERSITY EXAMINATION FOR:**  
BACHELOR OF SCIENCE IN MARINE RESOURCE MANAGEMENT  
**BSMR 15S/YEAR 3/SEMESTER 1**

**AES 4307: ECOLOGICAL ECONOMICS**

**SPECIAL/ SUPPLEMENTARY EXAMINATIONS**

**SERIES: SEPTEMBER 2018**

**TIME: 2HRS**

*Instructions to Candidates*

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions.

*This paper consists of two printed pages.*

*Mobile phones are NOT allowed in the examination room*

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**QUESTION ONE (30 MARKS)**

1. State the reasons for market failure. (5 marks)
2. Briefly explain market failure and externality (5 marks)
3. Define the following terms: Market for Ecosystems Services (MES) and Payment for Ecosystem Services (PES) (5 marks)
4. Briefly explain the linkages that exist between economics and the environment (5 marks)

5. i) Define the term 'commodification' as used in environmental economics (2 marks)  
ii) Briefly explain the 3 steps of 'commodification' (3 marks)
6. Briefly explain the following terms as used in environmental economics. (5 marks)
- a) Efficiency
  - b) Sustainability

**QUESTION TWO (20 MARKS)**

- a) Discuss the limitations of the neo-classical model that led to the development of environmental economics (12 marks)
- a) Using examples, state and explain the various ecosystems services humans derive from the natural environment (8 marks)

**QUESTION THREE (20 MARKS)**

- a) Discuss the main features of ecological economics (10 marks)
- b) Describe the characteristics that make a particular resource a market good (10 marks)

**QUESTION FOUR (20 MARKS)**

Discuss the 3 main broad questions that form the foundations of environment economics and how they contributed to the development of this field.

**QUESTION FIVE (20 MARKS)**

Discuss the 3 main broad questions that form the foundations of environment economics and how they contributed to the development of this field.