



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2015/2016**

FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN ENVIRONMENTAL  
SCIENCE WITH INFORMATION TECHNOLOGY

**MAIN CAMPUS**

**NES 107: ENERGY AND ENVIRONMENT**

Date: 29<sup>th</sup> April, 2016

Time: 8.30 - 10.30 am

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**INSTRUCTIONS:**

- Answer question ONE and any other TWO questions.

1. (a) Differentiate between the following:
  - (i). Primary energy and Secondary energy [2 marks]
  - (ii). Renewable energy and Non-renewable energy [4 marks]
  - (iii). Energy efficiency and Energy conservation [4 marks]
- (b) Explain with examples the main sources of electricity to the Kenya's national grid. [6 marks]
- (c) Describe the type of fuel obtained by mixing  $1600\text{m}^3$  of super petrol and  $400\text{m}^3$  ethanol [6 marks]
- (d) Describe the FOUR types of nuclear reactors in commercial use. [8 marks]
2. (a) Explain the negative environmental impacts of using coal as a source of energy in the industrial sector. [10 marks]
- (b) Examine the strategies that could be adopted to reduce greenhouse gas emissions in Kenya's transport sector. [10 marks]
3. (a) Explain the constraints that have hampered solar energy development in developing Countries in Africa. [8 marks]
- (b) Discuss the possible environmental impacts associated with the proposed large scale wind power scheme within Turkana County. [12 marks]
4. Discuss the strategies that may be used in energy conservation by the manufacturing industries and commercial enterprises in Kenya. [20 marks]
5. (a) Discuss the negative impacts of Sondu-Miriu Hydropower Plant within Kisumu County's local environment. [14 marks]
- (b) Differentiate between tidal energy and ocean waves' energy. [6 marks]
6. (a) Describe the key functions and relationships between any FIVE of the institutions operating in the Kenya's Electricity sub-sector. [10 marks]
- (b) Explain the potential environmental impacts of establishing a geothermal station within Silale in Baringo County. [10 marks]