



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF ENGINEERING AND TECHNOLOGY
UNIVERSITY EXAMINATIONS FOR THE DEGREE OF SCIENCE IN:
RENEWABLE ENERGY TECHNOLOGY AND MANAGEMENT
1ST YEAR 1ST SEMESTER 2015/2016 ACADEMIC YEAR
CENTRE: MAIN CAMPUS

COURSE CODE: TET 3111

COURSE TITLE: INTRODUCTION TO RENEWABLE ENERGY & MGT.

EXAM VENUE: CR STREAM: BSc RE. ENERGY TECH AND MGT

DATE: 21/4/16 EXAM SESSION: 11.30 – 1.30PM

TIME: 2 HOURS

Instructions

- 1. Answer Question 1 (compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (COMPULSORY)

- a) Outline any five benefits for an institution been accredited with ISO 50001 (5 Marks)
- b) Outline four reasons that have led mankind to shift from the use of non-convectional sources of energy to convectional sources (4 Marks)
- c) Outline three stages in which the impact of energy usage to the environment can be evaluated on (3 Marks)
- d) Renewable energy is unaffordable for most people living in the developing world, and will remain so for many years. Outline six possible solutions (6 Marks).
- e) Outline any six challenges faced by key players in the energy sector in Kenya (6 Marks)
- f) State the two laws of thermodynamics (4 Marks)
- g) Define the following terms giving an example for each (2 Marks)
 - 1. Convectional sources of energy
 - 2. Non convectional sources of energy

QUESTION TWO

- a) Outline any four reasons why county governments are advocating for the use of renewable energy (4 Marks)
- b) Discuss any four legislations that guide the energy sector in Kenya (8 Marks)
- c) Discuss four forms of potential energy giving an example for each. (8 marks)

QUESTION THREE

- a) Discuss six reasons why KENGEN is using a lot of resources in energy storage systems (12 Marks).
- b) Using a well labeled illustration show the primary energy supply to end use diagram (Sankey diagram) (8 Marks)

QUESTION FOUR

- a) Discuss any five key players, explaining their function in the Kenyan energy market structure which are recognized by sessional Paper No. 4 of 2004 and the Energy Act No.12 of 2006 (10 Marks)
- b) Discuss any five methods which are used in the word to store energy (10 Marks)

QUESTION FIVE

- a) Discuss any five methods of transforming other forms of energy into electrical energy (10 Marks)
- b) Outline any six aspects of renewable energy (6 Marks)
- c) Discuss two principles that govern energy conservation planning (4 Marks)