

170



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

MAIN

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER EXAMINATIONS**

**FOR  
BSc ECONOMICS AND SCIENCE AND MATHEMATICS EDUCATION**

**COURSE CODE: ECO 417**

**COURSE TITLE: ENERGY ECONOMICS**

**DATE:**

**TIME:**

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**INSTRUCTIONS TO CANDIDATES**

**ATTEMPT QUESTION ONE AND ANY OTHER TWO**

**TIME: 2 Hours**

**MMUST observes ZERO tolerance to examination cheating**

**This Paper Consists of 2 Printed Pages. Please Turn Over**

### QUESTION ONE

- a. Describe how the following policies can be adopted to promote Kenya's strategy for energy sector reforms:
- i. Last mile connectivity policy
  - ii. Feed-in tariff policy
  - iii. Decentralized grid infrastructure
  - iv. Clean development mechanism
  - v. Public-private partnerships (25 marks)
- b. Identify the various interventions that can be adopted to reduce the hazards of indoor pollution arising from high-carbon energy use. (5 marks)

### QUESTION TWO

- a. As an Energy Consultant, discuss the key energy security issues affecting transitioning countries and suggest appropriate policies to enhance climate resilient energy security in Kenya. (10 marks)
- b. Describe the various domestic and international mechanisms for funding climate resilient energy security in Kenya. (10 marks)

### QUESTION THREE

As a Policy Officer, highlight the macroeconomic constraints of achieving Kenya's goal of universal access to clean energy and recommend appropriate fiscal and monetary reforms to accelerate this target. (20 marks)

### QUESTION FOUR

- a. Identify key energy sector stakeholders by highlighting their role in promoting the uptake of renewable energy in Kenya and recommend appropriate policies to support investment in this subsector. (12 marks)
- b. The average power consumed by a rural school kitchen per hour is 600 Watts, with 10 hours of daily consumption. Given a tariff of 12 kilowatts per hour and a fuel tax of 10%, calculate the monthly electricity cost and recommend appropriate fuel efficient production measures. (8 marks)

### QUESTION FIVE

- a. Describe the various emerging innovative and low-cost energy technologies and suggest appropriate policy interventions to ensure that they are accessible to low-income off-grid households. (10 marks)
- b. Critically explain, using a clear diagram, the policy applications of the Hotelling Rule to a transitioning country (10 marks)