



# MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (COMMUNITY DEVELOPMENT)

ECD 110: ENVIRONMENTAL INNOVATIONS AND TECHNOLOGIES

DATE: 20/01/2021

TIME: 8.30-10.30 AM

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## INSTRUCTIONS:

Answer question ONE and any other TWO questions

### QUESTION ONE (30 MARKS)

- a) Explain the following terms with reference to environmental technologies and innovations:
- Eco-innovations (2 marks)
  - Eco-efficiency (2 marks)
  - Environmental technologies (2 marks)
  - Process innovations (2 marks)
  - Organizational innovations (2 marks)
- b) As the head of environment management unit in an industrial setting, discuss the practices you would recommend to reduce generation of waste and emissions at the source (10 marks)
- c) Citing relevant examples, discuss the link between environmental innovations and sustainable development (10 marks)

### QUESTION TWO (20 MARKS)

- a) Using suitable examples, discuss the key factors affecting the adoption of sustainable environmental technologies in Kenya (10 marks)
- b) Explain the policy instruments that can be adopted to promote development and adoption of environmental technologies in Kenya (10 marks)

**QUESTION THREE (20 MARKS)**

Citing relevant examples, discuss how environmental innovations and technologies can be used in addressing:

- a) Solid waste management (10 marks)
- b) Desertification (10 marks)

**QUESTION FOUR (20 MARKS)**

Discuss the role of integrated research and development in environmental innovations and technologies

**QUESTION FIVE (20 MARKS)**

Discuss key steps in the development and implementation of an Environmental Management System (EMS)