



MACHAKOS UNIVERSITY

University Examinations for 2020/2021 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: 24/3/2021

TIME: 8.30-10.30 AM

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:
- Cleaner production (2 marks)
 - Environmental sound technologies (2 marks)
 - Material recyclability (2 marks)
- b) Citing relevant examples, discuss the importance of cleaner production in attainment of sustainable development goals (10 marks)
- c) Explain the core dimensions of eco-efficiency that must be considered in the development of products and services with environmental implications (14 marks)

QUESTION TWO (20 MARKS)

- a) Explain the key stages in the evolution of environmental management strategies (10 marks)
- b) Explain different ways through which reduced generation of wastes and emissions at the source can be achieved in an industrial setting (10 marks)

QUESTION THREE (20 MARKS)

- a) Citing relevant examples, discuss the key factors that can be used to promote adoption of eco-efficient practices in production and consumption of goods and services in Kenya (10 marks)
- b) Critically evaluate the application of regulations in promoting environmental technologies in Kenya (10 marks)

QUESTION FOUR (20 MARKS)

Discuss how environmental innovations and technologies can be used to enhance community adaptation to climate change

QUESTION FIVE (20 MARKS)

Citing relevant examples, discuss the key principles of green chemistry as used in achieving sustainable chemical process and product development