



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2015/2016

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL STUDIES

SECOND SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE  
IN ENVIRONMENTAL STUDIES

ENS 134: TECHNOLOGY, ENVIRONMENT AND DEVELOPMENT

Date: 26/4/2016

Time: 2:00 – 4:00 PM

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## **INSTRUCTIONS**

*This paper consists of FIVE questions*

*Answer question one and other two questions in this paper*

## **QUESTION ONE: (COMPULSORY)**

- a) Explain four (4) levels of development continuum under which a country can be placed (4 marks)
- b) Explain the following:
- i. Development continuum (2 marks)
  - ii. Environment (2 marks)
  - iii. Development (2 marks)
  - iv. Industrialization (2 marks)
- c) Explain five (5) interlinked components of development continuum (5 marks)
- d) (i) Explain by giving examples four (4) categories of a technology (4 marks)
- (ii) Explain three (3) problems associated with Gross Domestic Product (GDP) in measuring development gap (3 marks)
- e) (i) Outline four (4) principles that an organization should put in place to achieve sustainable development (4 marks)
- (ii) Outline four (4) ways through which a technology can be transferred (2 marks)

## QUESTION TWO

- a) Explain four (4) indicators that can be used to measure development gap (10 marks)
- b) (i) Outline four (4) components that encompass the totality of the environment (4 marks)  
(ii) Illustrate the four components (2 marks)
- c) Explain the difference between indigenous knowledge and traditional knowledge (4 marks)

## QUESTION THREE

- a) Explain four (4) modern technologies in agriculture and industry (8 marks)
- b) Explain three (3) theories of development (6 marks)
- c) Outline and briefly explain the six stages of technology or innovation adoption process (6 marks)

## QUESTION FOUR

- a) Explain six (6) challenges facing the agricultural sector in terms of technology development and transfer systems in the Eastern and Central African region (8 marks)
- b) Explain two (2) ways that are of particular relevance to policy-makers through which contemporary globalization manifests itself (6 marks)
- c) Explain three problems associated with urbanization (6 marks)

## QUESTION FIVE

- a) Explain five (5) challenges associated with urbanization (10 marks)
- b) i) Explain the three components of sustainability (3 marks)  
ii) Illustrate the setup of the three components (2 marks)
- c) i) Explain three objectives of development (3 marks)  
ii) List four (4) areas of human needs encompassed by sustainable development (2 marks)