



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF ENGINEERING TECHNOLOGY**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN**  
**RENEWABLE ENERGY AND BACHELOR OF SCIENCE IN CONSTRUCTION**  
**MANAGEMENT**  
**SEMESTER 2016/2017 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

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**COURSE CODE: PES 3215**

**COURSE TITLE: SUSTAINABLE DEVELOPMENT**

**EXAM VENUE:**

**STREAM: ENGINEERING**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

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**Instructions:**

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

## QUESTION ONE

- a) Define the following terms as applied to sustainable development
  - (i) Sustainability (2 marks)
  - (ii) Development (1 mark)
  - (ii) Utility (1 mark)
- b) With the help of a schematic diagram, discuss the Concept of Sustainable Development (CSD) (5 marks)
- c) Discuss how Kenya has mainstreamed the concept of sustainable development into her development agenda (5 marks)
- d) Outline **Ten** conventional CSD indicator themes used for measuring Sustainable Development (5 marks)
- e) Outline any **Ten** Sustainable Development Goals (SDGs) (5 marks)
- f) Briefly explain the impact of population growth on sustainable development in Kenya (5 marks)

## QUESTION TWO

- (a) With examples, discuss the theories of weak and strong sustainability (12 marks)
- (a) Briefly explain the relationship between technological change and sustainable development (8 marks)

## QUESTION THREE

- (a) Discuss the conditions and guiding principles of Sustainable Development (10 marks)
- (b) Discuss the role of a planner/engineer/environmentalist in Sustainable Development (10 marks)

## QUESTION FOUR

- (b) Discuss the Precautionary Principle as a minimum Standard for Sustainable development (10 marks)
- (c) Elucidate the evolution and history of Sustainable Development (10 marks)

## QUESTION FIVE

- Discuss Sustainable livelihoods Approaches for rural development (20 marks)