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**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**

 **SEMESTER2 2016/2017 ACADEMIC YEAR**

**CENTRE: MAIN CAMPUS**

**COURSE CODE: PES 3215**

**COURSE TITLE: SUSTAINABLE DEVELOPMENT**

**EXAM VENUE: LAB 8 STREAM: SPATIAL PLANNING**

**DATE: 19/04/17 EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2 HOURS**

**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**

1. Define the following terms as applied to sustainable development

(i) Sustainability (2 marks)

(ii) Development (1 mark)

(ii) Utility(1 mark)

1. With the help of a schematic diagram, discuss the Concept of Sustainable Development (CSD)

 (5 marks)

1. Discuss how Kenya has mainstreamed the concept of sustainable development into her development agenda (5 marks)
2. Outline **Ten** conventional CSD indicator themes used for measuring Sustainable Development

(5 marks)

1. Outline any **Ten** Sustainable Development Goals (SDGs) (5 marks)
2. Briefly explain the impact of population growth on sustainable development in Kenya(5 marks)

**QUESTION TWO**

1. With examples, discuss the theories of weak and strong sustainability (12 marks)
2. Briefly explain the relationship between technological change and sustainable development

 (8marks)

**QUESTION THREE**

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

**QUESTION FOUR**

1. Discuss the Precautionary Principle as a minimum Standard for Sustainable development

 (10 marks)

1. Elucidate the evolution and history of Sustainable Development(10 marks)

**QUESTION FIVE**

Discuss Sustainable livelihoods Approaches for rural development (20 marks)