



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**THIRD YEAR SECOND SEMESTER UNIVERSITY EXAMINATION FOR
THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SECURITY AND
SECOND YEAR SECOND SEMESTER UNIVERSITY EXAMINATION
FOR THE DEGREE OF BACHELOR OF SCIENCE IN ANIMAL SCIENCE
AND BACHELOR OF SCIENCE IN AGRICULTURAL AND EXTENSION
EDUCATION**

2017/2018 ACADEMIC YEAR

REGULAR

COURSE CODE: ALS 3221/PWE 3321

COURSE TITLE: Soil and Water Conservation Management

EXAM VENUE:

**STREAMS: Bsc. Food Security, BSc. Animal
Science and BSc. Agricultural and Extension
Education.**

DATE:

EXAM SESSION:

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A [30 MARKS]

Answer ALL questions from this Section.

1. Discuss the mechanics of water erosion. **(4 Marks)**
2. Define the following terms;
 - a. Land degradation **(2 marks)**
 - b. Soil erodibility **(2 marks)**
 - c. Water use efficiency **(2 marks)**
 - d. Soil tolerance **(2 marks)**
3. Discuss the factors influencing erodibility. **(5 Marks)**
4. Differentiate between;
 - a. Drought resistant and drought escaping crop. **(2 Marks)**
 - b. Cut off drains and retention ditches. **(2 Marks)**
5. Discuss factors affecting each of the following processes of the hydrologic cycle. **(4 Marks)**
 - a. Infiltration process
 - b. Runoff process
6. Discuss ways through which surface residue cover influences infiltration rate. **(5 Marks)**

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

7.
 - a) Discuss FIVE ways of improving Crop Water Use Efficiency in Arid and Semi Arid regions of Kenya. **(10 Marks)**
 - b) Discuss the impacts of soil erosion on land productivity. **(10 Marks)**
8.
 - a) Discuss FIVE major causes of degradation in croplands. **(10 Marks)**
 - b) Discuss the causes and global effects of deforestation. **(10 Marks)**
9. Discuss the soil conservation practices that should be employed under the following circumstances.
 - a. Restricted rainfall infiltration. **(10 Marks)**
 - b. Low erratic rainfall. **(10 Marks)**