



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

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

2023/2024 ACADEMIC YEAR

REGULAR

COURSE CODE: PNB 9303/APB 1202

COURSE TITLE: Soil and Water Conservation Management

EXAM VENUE:

**STREAMS: BSc. Food Security, BSc. Soil
Science, BSc. Animal Science & BSc. AGED**

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. Define the following terms **(6 Marks)**
 - a. Land degradation
 - b. Soil conservation
 - c. Soil erodibility

2. Discuss the factors affecting soil structure **(6 Marks)**
3. Discuss the influence of structure on porosity and pore size distribution **(6 Marks)**

4. Discuss factors affecting each of the following processes of the hydrologic cycle **(6 Marks)**
 - a. Infiltration process
 - b. Runoff process
 - c. Evapo-transpiration

5. How does clay content in soil affect soil physical properties? **(6 Marks)**

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

6. Discuss ways of increasing crop water use efficiency in arid and semi-arid regions of Kenya **(20 Marks)**

7. Discuss the major causes of soil degradation in Sub-Saharan Africa **(20 Marks)**

10. Explain the relevance of the Universal Soil loss Equation **(20 Marks)**