

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY**School of Agricultural Sciences and Forestry****Bachelors of Education (Secondary) (Agricultural Science) Year 3****SAC 703- SOIL EROSION AND ITS MANGEMENT****Trimester 1, 2019 Final Examination****TOTAL MARKS: 100****TIME DURATION: 3 HOURS****INSTRUCTIONS TO STUDENTS**

1. This paper consists of four (4) pages. Please check to see that your paper is complete.
2. You are allowed 10 minutes extra reading time in which you are NOT permitted to write.
2. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
3. Use both sides of the answer sheet and write your candidate number on each sheet.
4. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
5. Candidates are not allowed to carry any textual material, printed or written material, bits of papers, inside the Examination Room/Hall

“MOBILE PHONES ARE STRICTLY NOT ALLOWED”

SECTION	PARTICULARS	TOTAL MARKS
A	Multiple choice question	10
B	Short answers questions	30
C	Long answers questions	60
	Total	100

SECTION A

MULTIPLE CHOICE QUESTIONS

(10X1=10 MARKS)

1. Soil erosion can be prevented by _____.
 - a. deforestation
 - b. afforestation
 - c. overgrazing
 - d. removal of vegetation

2. Mulching helps in _____.
 - a. soil fertility
 - b. moisture conservation
 - c. improvements soil structure
 - d. soil sterility

3. The _____ value in the Universal Soil Loss Equation is a measure of the erosive potential of the rainfall.
 - a. R
 - b. P
 - c. L
 - d. A

4. Erosion of very fine particles is perceived on account of _____.
 - a. saltation
 - b. suspension
 - c. surface creep
 - d. shifting of dunes

5. Why is organic matter (humus) an vital part of soil?
 - a. It helps to improve water infiltration
 - b. It can break down organic pollutants
 - c. It converts nitrogen in the air into nitrates used by plants
 - d. It is rich in nutrients, which is important for fertility

6. The C value in the Universal Soil Loss Equation _____.

- a. the maximum tolerance level for soil losses
- b. gives an estimate of the average soil loss in tons/acre/year
- c. measure of the erosion potential of the climate
- d. impact of cultural practices (tillage, rotations, residue cover) on erosion losses

7. When trees and shrubs are planted in long rows along streams, they are defined as _____.

- a. wind breaks
- b. soil binders
- c. shelter belts
- d. basin blisters

8. Terracing is prepared in _____.

- a. desert areas
- b. hilly areas
- c. dry areas
- d. plain areas

9. The practice of leaving old stalks to provide cover from rain in order to reduce water runoff and soil erosion is called _____.

- a. cover crops.
- b. no-till farming.
- c. terracing.
- d. contour plowing.

10. Soil conservation means _____.

- a. prevention of spread of desert
- b. to check soil erosion by wind and rains
- c. to check soil erosion by afforestation
- d. all of these

SECTION B

SHORT ANSWERS QUESTIONS

(4X5=30 MARKS)

Determine the differences. Attempt any FOUR (4) only.

1. Erosivity and erodibility
2. Soil degradation and soil conservation
3. Rill erosion and gully erosion
4. Geological and accelerated erosion.
5. Onsite and offsite effects of accelerated soil erosion
6. Desertification and land degradation

SECTION C

PART 5: Long answers questions

(6X10=60 MARKS)

1. Explain the importance of soil conservation on watershed management and discuss some of the factors affecting watershed management and planning in Fiji.
2. “The intensity of rainfall causes extensive soil erosion in Fiji”. Elaborating this discuss the different processes involved in soil erosion. Explain the effects of soil erosion on soil productivity.
3. Discuss the factors that influence the rate of wind erosion. State and explain any three (3) agronomic/cultural and two (2) physical measures used to control erosion.
4. Describe the evaluation of soil losses using universal soil loss equation and limitation of USLE model.
5. “Soil erosion is a major environmental problem in Fiji”. Explain the types of soil erosion occurring in Fiji and use of land capability classification as a guide to soil conservation.
6. “Conserving soils, increasing soil organic matter, contributes to climate change mitigation”. Elaborating this statement explain the need for soil conservation and soil resource management in Fiji. Discuss solutions to problems encountered in implementation of soil erosion control practices and policies.

END OF EXAMINATION PAPER