

COLLEGE OF AGRICULTURE, FISHRIES AND FORESTRY (CAFF)

Department of Soil Science & Agricultural Engineering

School of Agricultural Sciences

Bachelors of Science in Agriculture Year 3

**FINAL EXAMINATION: 2017**

**Trimester II, 2017**

**SAC 703-SOIL EROSION AND ITS MANAGEEMNT**

**TOTAL MARKS: 100**

**TIME DURATION: 3:00 HOURS**

**INSTRUCTIONS TO STUDENTS**

1. This paper consists of five (5) 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.
3. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
4. Use both sides of the answer sheet and write your candidate number on each sheet.
5. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
6. 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	Part 1: Fill in the Blanks Part 2: True and False Part 3: MCQ Part 4: Differentiate	40
B	Part 5: Short answers Part 6: Long answers	60
	Total	100

## SECTION A:

### PART 1

#### FILL THE BLANK:

(5X1=5 MARKS)

1. Physical conditions (land-form, weather) in Fiji are conducive to high rates of -----.
2. -----erosion in water-supply catchments has, on occasion, damaged the water supplies of Ba and Labasa.
3. -----government circles to the need for integrated watershed management.
4. -----occurs when a portion of hill slope becomes too weak to support its own weight.
5. -----process of detachment, transportation, and deposition of sediment by the erosive and transport agents.

### PART 2

#### STATE TRUE OR FALSE

(5X1=5 MARKS)

1. Erosion, is of Latin origin, derived from the verb “eroder” to eat away,” roder ‘-to gnaw.
2. Natural soil erosion can play a beneficial role in the environment .
3. Erosion can be interpreted as physical soil degradation.
4. One of the causative factors of land degradation is improper land clearing methods.
5. Soil erosion is a major environmental problem in Fiji.

### PART 3 :

(10X1=10 MARKS)

#### WRITE THE LETTER OF YOUR CHOICE (EACH 0.5 MARK)

1. Coastal beaches are shrinking because \_\_\_\_\_.
  - a) More people are moving to coastal areas
  - b) Underground water reserves are being drained, causing the land to sink
  - c) Hurricanes are destroying the coastal beaches
  - d) Polar ice caps are melting and tidal erosion is occurring

2. Sheet erosion is caused by: \_\_\_\_\_.
- a) Fast running rivers
  - b) Wind
  - c) Heavy rains partially
  - d) Glaciers
3. Plants prevent soil erosion by \_\_\_\_\_.
- a) Providing food for herbivores
  - b) Releasing water into the atmosphere through transpiration
  - c) Holding soil in place with their roots
  - d) The process of photosynthesis
4. If whole of topsoil is washed down, erosion is said to be \_\_\_\_\_.
- a) sheet erosion
  - b) gully erosion
  - c) shelter wash off
  - d) wind erosion
5. Flood may be an outcome if \_\_\_\_\_.
- a) trees do not retain water
  - b) eroded soil gets deposited in rivers and streams
  - c) water levels rise rapidly in rivers
  - d) all of these
6. 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
7. What is soil erosion \_\_\_\_\_.
- a) It is the process by which soil is formed
  - b) A harmful process that involves the removal and transport of soil by wind and water
  - c) A natural method of filtering harmful pollutants
  - d) A process often referred to as the 'greenhouse' effect

8. Which of the following is NOT an effect of soil erosion \_\_\_\_\_.

- a) Reduced soil quality
- b) Water pollution
- c) Decreased crop yield
- d) Improved water quality

9. Soil erosion can be reduced by \_\_\_\_\_.

- a) Reducing over grazing
- b) Planting proper plants
- c) Making dams
- d) All of those

10. Which is the main causative factor for desertification \_\_\_\_\_.

- a) Irrigated agriculture
- b) Overgrazing
- c) Tourism
- d) Developmental activities

**PART 4 :**

**(5X4=20 MARKS)**

**Write difference between for the following questions**

**Note: Attempt any FIVE (5) questions only.**

1. Geological and Accelerated erosion
2. Water erosion and Wind erosion
3. Rill and Gully erosion
4. Saltation and Surface creep
5. Weathering and Erosion
6. Sheet and Slope erosion

**SECTION B**

## PART 5

### Short Answer Type Questions

(5X6=30 Marks)

1. How does agricultural cultivation contribute to soil erosion??
2. What is soil and land degradation?
3. What is the (USLE) universal soil loss equation?
4. How do farmers attempt to manage crops to reduce soil erosion?
5. How does overgrazing cause soil erosion?

## PART 6

(3X10=30 Marks)

### Descriptive Type Questions :Write Three(3) questions only.

1. Analyse the effects of coastal erosion in Fiji.
2. Briefly apply your knowledge and views on importance of soil erosion studies in Fiji.
3. What are the soil erosion problems in Fiji and their management?
4. What type of cultural practices can be adopted to control the wind erosion? Write a paragraph on each.
5. Give the general classification of different type of conservation tillage systems and explain the operations involved in each category

**END OF EXAMINATION PAPER**