



FIJIANATIONAL UNIVERSITY

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY

SCHOOL OF AGRICULTURAL SCIENCES AND FORESTRY

DEPARTMENT OF SOIL SCIENCE & AGRICULTURAL ENGINEERING

BACHELOR OF EDUCATION (SECONDARY) (AGRICULTURAL SCIENCE)

Trimester 1, 2018 Final Examination

SAC 703 EROSION AND ITS MANGEMENT

TOTAL MARKS: 100

TIME DURATION: 3 HOURS

INSTRUCTIONS TO STUDENTS

1. This paper consists for 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.

MOBILE PHONES ARE STRICTLY NOT ALLOWED

SECTION	PARTICULARS	TOTAL MARKS	THE ALLOCATIONS
A	Part 1: Multiple Choices Part 2: True and False Part 3: Fill in the Blanks	40	40 minutes
B	Short answers	20	50 minutes
C	Long answers	40	90 minutes
	Total	100	

SECTION -A

There are three parts in this section. All the questions are compulsory.

Part 1: Multiple choice questions.

(15 X 1=15 Marks)

1. The movement of any material downslope which is controlled by gravity is _____.
A. mass movement
B. striation
C. shelter wash off
D. runoff
2. Which is the main causative factor for desertification?
A. irrigated agriculture
B. overgrazing
C. tourism
D. developmental activities
3. Deforestation causes _____.
A. soil erosion
B. pollution
C. no floods
D. none of these
4. Sheet erosion is caused by _____.
A. fast running rivers
B. wind
C. heavy rains
D. glaciers
5. Main indicator of soil erosion is _____.
A. deforestation
B. afforestation
C. ozone layer
D. goats and grazing animals
6. If whole of topsoil is washed down, erosion is said to be _____.
A. sheet erosion
B. gully erosion
C. shelters wash off
D. wind erosion
7. The movement of material from one place to another is called _____.
A. erosion
B. shelters wash off
C. weathering

- D. deposition
8. The lifting and removal of fine sediment by wind is called _____.
- A. erosion
 - B. deflation
 - C. saltation
 - D. abrasion
9. The lifting and removal of fine sediment by wind is called _____.
- A. erosion
 - B. deflation
 - C. saltation
 - D. abrasion
10. The erosion is _____.
- A. the only way to break down rocks
 - B. the movement of rock particles by wind, water, ice, and gravity
 - C. a process that only involves water
 - D. the process that breaks down rock and other substances at the Earth's surface
11. The universal soil loss equation (USLE) is _____.
- A. $A = R * K * L * S * C * Q$
 - B. $A = R * K * I * S * C * P$
 - C. $A = R * K * L * S * C * P$
 - D. none of the above
12. Windbreaks and shelterbelts help to _____.
- A. a belt of trees and shrubs for protection against strong winds
 - B. reduce wind velocity
 - C. both A & B
 - D. none of the above
13. Conservation plowing help to _____.
- A. tear the ground up and creates erosion problems
 - B. done on the contours of the landscape
 - C. keeps the dead weeds and stalks from the previous year to return nutrients to the soil
 - D. is a poor way to conserve soil
14. Which of the following is not a threat commonly faced by soils?
- A. soil erosion
 - B. percolation
 - C. deforestation
 - D. climate change
15. Eroded soils are _____.
- A. rich in plant nutrients
 - B. unaltered in plant nutrients
 - C. devoid of plant nutrients
 - D. all of these

Part 2: Mark True or False

(10 X 1 =10Marks)

1. Natural erosion is sometimes referred to as geologic erosion.
2. Wave erosion, which occurs along beaches and coasts, is caused by the impact of breaking waves and the abrasion of wave-transported sediment.
3. Soil erosion is not a harmful process that involves the removal and transport of soil by wind and water.
4. Eroded soils are unaltered in plant nutrients.
5. Soil erosion by water is not a threat commonly faced by soils in Fiji.
6. If biological measures are not effective, then we can go for mechanical measures of erosion control.
7. Construction of check dams is a mechanical measure of erosion control.
8. Movement of soil mass from upper portion of the mountain to the lower portion is called land slide.
9. Prediction of runoff is difficult as it depends upon several factors.
10. Rill erosion is a type of wind erosion.

Part 1: Fill in the blanks with appropriate answer.

(10X1.5=15 Marks)

1. Erosion, is of Latin origin, derived from the verb _____ to eat away.
2. _____ erosion is often called mass wasting.
3. _____ is the process of sediment accumulation which occurs when a transporting agent is forced to deposit its load of sediment.
4. Running-water or _____ erosion includes erosion caused by the solvent action of water, by the force of moving water, and by the abrasive effects of rock particles in moving water.
5. _____ is the process of detachment and movement of soil particles by the erosive forces of wind or water.
6. The process that transports rocks, soil and sediments to a different location is called _____.
7. _____ is a major environmental problem in Fiji.
8. Soil _____ section of Department of Agriculture in Fiji was formed in 1949.
9. _____ refers to the simultaneous formation and loss of soil which maintain the balance between formation and various losses.
10. _____ erosion causes large losses of soil fertility.

Section-B

Short answers

(5 X4=20 Marks)

Provide the differences of any five (05) of the following.

1. Geological and accelerated erosion
2. Onsite and offsite effects of erosion
3. Soil erosion and soil degradation
4. Rill and gully erosion
5. Erosivity and erodibility
6. Sheet erosion and gully erosion
7. Biological and mechanical measures of erosion control

Section-C

Long answers

(4 X10=40 Marks)

Answer only four (4) questions from the following. Each question carries ten (10) marks.

1. Analyse the importance of soil erosion studies in detail.
2. What do you understand by universal soil loss equation (USLE)? Provide details of factors of USLE.
3. Provide general classification of different type of conservation tillage systems and analyse the operations involved in each category.
4. Use classification of soils according to land capability and land suitability for conservation management.
5. What is wind erosion? Provide important factors affecting wind erosion in detail.

THE END