FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI

SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY

DEPARTMENT OF SOIL SCIENCE AND TECHNOLOGY

2005/2006 HARMATTAN SEMESTER EXAMS

SOIL MANAGEMENT AND CONSERVATION: SST 507

TIME ALLOWED: 3 HOURS

INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER FOUR QUESTIONS.

QUESTUION 1

(a) Briefly state the erosion problems
(b) Mention five primary sources of erosion in Nigeria
(c) Mention the environmental and economic impacts of erosion
(d) What are the three phases of the erosion process?
(e) Briefly describe the various types of erosion.
(f) Briefly describe the four principal factors in soil erosion.

Question 2

(a) How do raindrops cause soil loss?
(b) How does soil structure influence the amount of soil lost by raindrop splash and runoff water?
(c) Describe briefly how runoff depth, land, slope and surface conditions affect the erosiveness of running water.

Question 3

(a) Discuss the factors considered in the formulation of the universal Soil Loss Equation.
(b) What are the uses of the equation?
(c) In what situations should the Equation not be used?

Question 4

(a) What is the Rational Method Equation?
(b) Discuss the three factors in the Rational Method Equation
(c) What are the advantages and disadvantages of the Rational Method Equation?
(d) What other methods of computing runoff are available.

Question 5

Discuss the strategies adopted for the control of soil erosion on agricultural lands.

Question 6

(a) In what way does vegetation help to prevent erosion?
(b) Why is grass a better erosion control plant than flowers, shrubs and trees.
(c) What criteria are considered in the selection of plants for erosion control?

Question 7

(a) Discuss the factors that are considered in the design and construction of mechanical protection works.
(b) What are the advantages and disadvantages of undertaking construction of mechanical protection works by (a) Government (b) Private Sector and (c) Landowners?

Question 8

(a) What are gullies and how are they formed?
(b) Briefly describe the various methods of controlling gullies.