FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
DEPARTMENT OF SOIL SCIENCE AND TECHNOLOGY
SCHOOL OF AGRIC AND AGRICULTURAL TECHNOLOGY

2007/2008 RAIN SEMESTER EXAMINATION
SST 502: Soil and Plant Water Relationships
Instructions: Answer any 5 Questions
Time: allowed: 3 hours,

Question 1
Discuss the importance of (a) Soil texture (b) Structure (c) Porosity and(d) Compaction in Soil water plant relations.

Question 2
(a) The moisture retention characteristics of a soil is related directly or indirectly to the size and distribution of soil pores. Trace the changes in soil water conditions which take place during and following a rainstorm or application of irrigation water.

(b) What forces are responsible for the retention of moisture by soil solid..

Question 3
Discuss the role of the (a) The plant (b) The soil and (c) The atmosphere in the plant – soil – atmosphere relationships.

Question 4
Describe the various methods of measuring soil moisture.
What are the advantages and disadvantages of each method.

Question 5
(a) How do plant respond to moisture stress?
(b) What are the effects of moisture stress on plants?
(c) How does the rooting characteristics of a plant affect its moisture uptake capability.

Question 6
(a) Distinguish between hydraulic conductivity and infiltration capacity.
(b) Discuss the factors that affect the soil infiltration capacity.

Question 7
(a) Distinguish between the following:
(i) Evaporation
(ii) Transpiration
(iii) Evapotranspiration
(iv) Potential Evapotranspiration.
(b) How can evaporation be controlled in a crop field?.