

eutrophication

irrigation schedules shows when irrigation is to be applied and the quantity of water to be applied. it also have several approaches, which include: soil moisture depletion approach, climatological approach, critical stage approach

FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
School of Agriculture and Agricultural Technology
Department of Soil Science and Technology
Harmattan semester Examinations 2015/2016

SST 407: IRRIGATION, DRAINAGE AND HYDROLOGY

CREDIT UNIT: 2 UNITS

TIME: 2 HOURS

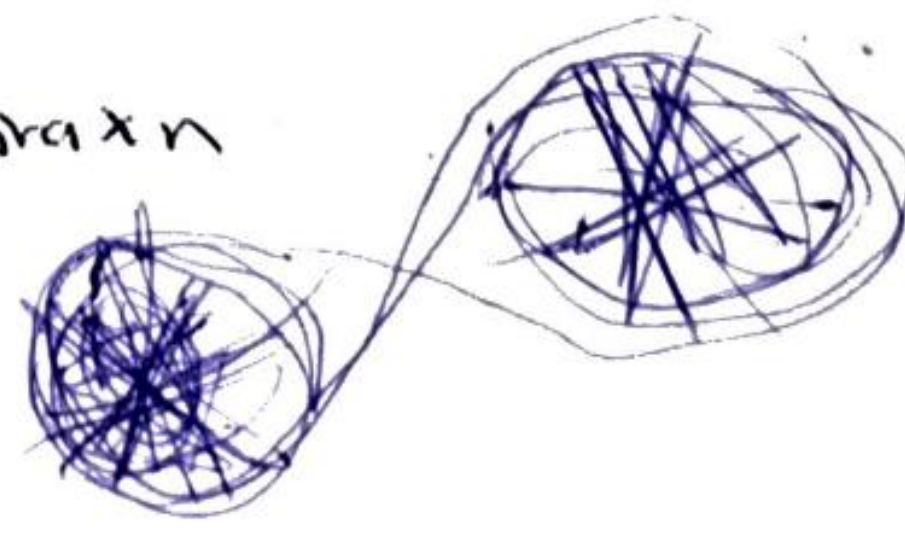
Instruction: Attempt any Four questions. Be concise and straight to the point

- 1(a) Explain the term Irrigation ✓
 (b) Mention importance of irrigation to Agriculture ✓
 (c) List 5 ways in which irrigation is a problem to Agriculture ✓
 (d) Explain the word "irrigation frequency" ✓ *high frequency/interval btw two irrigations decreases in a given period,*
 (e) List the four broad factors that affect frequency of irrigation ✓
 ① climate & season
 ② soil characteristics
 ③ crop
 ④ crop and water management practices
- 2(a) Classify irrigation methods ✓
*surface - furrow
 sub-surface - trenches
 overhead - channels or runs
 drip - perforated pipe*
 (b) State one example of each of the classes of irrigation ✓
 (c) Differentiate between Drip system of irrigation and Flood system ✓
*one portion of area and drop by drop
 - fertigo plant - large portion of field highly flooded with water to the whole soil*
 (d) In which of the two methods in 2c above is salt build up a major problem ✓ *in flood system*
 (e) How does salt build up in that system stated in 2d above ✓ *salt build up as water is been applied completely to the soil their by carrying some heavy metals and long stay of water on the surface*
- 3(a) Define the word Drainage ✓ *the removal of excess water from the soil*
 (b) State the different types of drainage systems you know ✓ *surface, sub-surface*
 (c) List 5 importance of drainage to Agriculture ✓
 ① it provides employment
 ② for all yr round cultivation of crops
 ③ roots of plants is dying because of excess water
 ④ loss of water leads to reduce salt build-up then leaching of salt in saline soil.
 (d) List 5 disadvantages of drainage to Agriculture ✓
 (e) Why do you think that irrigation and drainage are related in practice ✓ *they are related because if all does water water irrigation brings about drainage and drainage brings about irrigation*
- 4(a) What is evapotranspiration ✓ *this is the loss of water from soil surface and plant leaves to the atm*
 (b) Outline the factors influencing evapotranspiration
 (c) State the hydrologic equation and define the variables in the equation
- 5(a) Briefly trace the genesis of hydrology as it affects the earth generally
 (b) Write short note on hydrologic cycle and state the vital roles played by water in Agriculture

Factors affecting freq. of irrigation

- ① Climate & season
- ② Soil Characteristics
- ③ crop
- ④ crop & water mgmt practices

$P = \text{Precipitation}$
 $ET = \text{Evapotranspiration}$
 $SS = \text{Soil}$



Interval of irrigation is the time interval of time gap, usually expressed in days, btw two subsequent irrigations. or indicates the

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF SOIL SCIENCE AND TECHNOLOGY
FIRST SEMESTER EXAMINATION

COURSE CODE SST 407: COURSE TITLE: , IRRIGATION, DRAINAGE AND HYDROLOGY
CREDIT UNIT: 2 TIME ALLOWED: 2HRS DATE: 20-06-2017

INSTRUCTIONS: ATTEMPT ANY 4 QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS. BE CONCISE AND STRAIGHT TO THE POINT

1. The rainfall volume in Imo State is well over 2000mm, while the water requirement of rice grown under upland conditions is 1143mm.
- Do you think that there is need to irrigate the rice crop when grown during the rainy season? Use rainfall characteristics to justify your answer
 - State the term that describes the irrigation practice during the rainy season
- 2a. What do you understand by the term irrigation? ✓
- State the different types of irrigation and give 2 examples of each
 - State your reason why irrigation and drainage are related in crop production
- 3a. Define soil drainage ✓
- State the 2 broad classes of drainage systems you know ✓
 - State 5 merits and 5 demerits of soil drainage ✓
- 4a. State the domains of hydrology ✓
- State the hydrologic Equation
 - In which areas can hydrology be applied? ✓
- 5a. Differentiate between precipitation and evaporation
- outline the various ways of measuring precipitation in an area
 - What are the factors affecting the rate of evaporation in any given conditions.

3c

9/2/17

6

8 15 00 57

**FEDERAL UNIVERSITY OF TECHNOLOGY OWERRI
SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY
DEPARTMENT OF SOIL SCIENCE AND TECHNOLOGY**

2019/2020 SESSION HARMATTAN SEMESTER EXAMINATION.

**COURSE TITLE: IRRIGATION, DRAINAGE AND HYDROLOGY
CONTROL**

**CODE: SST 407 UNITS= 2 Date: 15th February 2021.
TIME. 2 hours**

INSTRUCTIONS: ATTEMPT ANY FIVE QUESTIONS (5). ALL QUESTIONS CARRY EQUAL MARKS

- ✓ 1 In Southeast Nigeria, average rainfall is over 2000mm. The rainfall requirements for arable crop production are well below this average. Do you think that with the volume of the annual rainfall, there is need for the study of irrigation?. Give reasons
- 2 What do you understand by irrigation scheduling?
 - (b) What soil factors are considered before scheduling a crop for irrigation command. ✗
- ✓ 3 Why is hydrology useful on earth. Explain?.
- 4 With the aid of a hydrological cycle, narrate the processes of
(i) water gain, (ii) water loss
- 5 Explain the following terms
 - (i) Water conveyance efficiency
 - (ii) Irrigation period
 - (iii) Water application efficiency

excess *infiltration*
- 6 (a) Differentiate between hydrogeology and marine hydrology ✗
(b) State some examples of each

ground *underground*
- ✓ 7 State the benefits of adequate drainage system in a well designed agricultural farm.

**OBSERVE ALL COVID 19 PROTOCOLS
STAY SAFE
GOOD LUCK**