

4. What are the criteria for selection of a farm pond. Discuss. 10
5. What are the design criteria for farm pond? A farm pond is designed with following parameters. Find the volume using both Simpson & Trapezoidal rule 10

Sl. No.	1	2	3	4	5	6	7
Contour(m)	250	251	252	253	254	255	256
Area (m ²)	220	290	340	370	480	550	620

6. What is the problem behind salt affected soils? Classify salt affected soils. A soil sample has 8g of NaCl has been dissolved in 2L of Water. Express the salt concentration in ppm, mmho/cm. 10
7. Briefly describe about Reclamation of soil. 10
8. What are Dupuit's equation assumptions? Find the expression for discharge for Confined aquifer. 10

B. Tech Odd Semester Examination, February, 2023

Agricultural Engineering (7th Semester)

Course No.: AE-701
(Land and Water Resource Management)

Full Marks: 50
Pass Marks: 15

Time: 2 hours

- Note:**
1. Attempt any five questions.
 2. Begin each answer in a new page.
 3. Answer parts of a question at a place.
 4. Assume reasonable data wherever required.
 5. The figures in the right margin indicate full marks for the question.
 6. All the mathematical symbols and abbreviations have their usual meanings.
1. Briefly describe about Land Usage Classification. 10
 2. Define : 10
 - i) Aquiclude
 - ii) Perched aquifer
 - iii) Aquitard
 - iv) Storage coefficient
 - v) Specific yield
 3. What is Farm pond? What are its types? A rectangular farm pond having a dyke area 100×50 m² has a top dyke width 3m & side slope 2:1 both side of dyke had a height of 5m. Depth of water in the pond is 4.5m & depth of impermeable bed below the ground level is 5m. Hydraulic conductivity for permeable dyke is 0.5 mm/min & for impermeable foundation is 0.1 mm/min. Determine the seepage loss through the pond in m³ and cm in case of depth. 10

Turn Over