



**COLLEGE OF AGRICULTURE, FISHRIES AND FORESTRY**

**SCHOOL OF AGRICULTURE & FORESTRY**

**DEPARTMENT OF CROP SCIENCE**

**BACHELOR OF SCIENCE IN AGRICULTURE YEAR 3**

**AGO732: Agriculture Water Management**

**Semester - 2, 2020 Final Examination**

**DURATION: 3 HOURS**

**INSTRUCTIONS TO STUDENTS**

1. You are allowed 10 minutes extra reading time in which you are not permitted to write.
2. This paper consists for three (03) pages. Please check to see that your paper is complete.
3. Printed or written material is not allowed in examination hall.
4. Answer all the questions in the answer booklet. Number your answers correctly in the answer booklet.
5. Attach all the sheets used as your answer paper in their correct sequence and secure with a string.
6. Use both sides of the answer sheet and write your candidate number on each sheet.

| <b>SECTION</b> | <b>PARTICULARS</b>            | <b>TOTAL MARKS</b> |
|----------------|-------------------------------|--------------------|
| <b>A</b>       | <b>Short answer questions</b> | <b>40</b>          |
| <b>B</b>       | <b>Long answer questions</b>  | <b>60</b>          |
|                | <b>Total</b>                  | <b>100</b>         |

## SECTION –A Short answer questions

There are three parts in this section. In your answer booklet write the question number followed by the answer.

### **Part 1: Answer all of following questions.**

**(5×3= 15 Marks)**

1. Provide a neat diagram of moisture extraction pattern within root zone of plants.
2. Analyse energy concept of soil water is brief.
3. Provide a brief note on reclamation of alkaline soil.
4. Provide advantages of plastic mulching in farming.
5. Apply critical stages of irrigation concept in farming.

### **Part 2: Provide short notes on any five (5) of following.**

**(5×3= 15 Marks)**

1. Water potential
2. Ground water table
3. Field capacity
4. Permanent wilting point
5. Available water
6. Water use efficiency
7. Irrigation efficiency
8. Fertigation

### **Part 3: Differentiate any five (5) of the following.**

**(5×2= 10 Marks)**

1. Evapotranspiration and Evaporation
2. Random drainage and Interceptor drainage
3. Crop water use efficiency and Field water efficiency
4. Water application efficiency and Water conveyance efficiency
5. Surface method and Sub surface method of drainage
6. Irrigation requirement and Irrigation frequency
7. Water Logging and Field drainage

**SECTION-B (Long answer questions)**

**(6x10=60 Marks)**

**Answer any six (6) questions from the following. Each question carries 10 marks.**

1. Fiji's islands have considerable differences in their water resources. Provide a detailed essay on water resource development in Fiji.
2. Provide a detailed note on "Soil-Water-Plant-Atmosphere Continuum".
3. Provide a detailed analysis on soil physical properties influencing irrigation.
4. Consideration of quality of irrigation water is important for irrigation projects. Carryout a detailed analysis on most common problems resulting from using poor quality water.
5. Apply causes of water logging and analyse effects of water logging of crops and soil.
6. Demonstrate drip irrigation system and its components by a neat well labelled diagram.
7. Provide a comparison between sprinkler irrigation and drip methods of irrigation in detail.
8. There are various methods of irrigation available for crops. Provide an essay on methods of irrigations, their suitability, advantages and limitations.

**THE END**

