



**NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP AND SOIL SCIENCE**

2024_2 EXAMINATION

COURSE TITLE: SOIL MICROCLIMATOLOGY (2 CU)

COURSE CODE: SLM 307

TOTAL SCORE: 70 MARKS

INSTRUCTION: Answer 3 questions in all

Question 1 is compulsory (30 marks) and any other TWO questions (20 marks each)

TIME ALLOWED: 2 ½ Hours

- 1.a. Discuss the principles of soil microclimatology. (10 marks)
- 1.b. Explain the following categories of atmospheric circulation systems.
- bi. Masoon bii Land and sea breezes. (10 marks)
- 1.c. Outline the three processes of heat energy transfer in the soil system. (10 marks)
- 2.a. Explain the concept of soil conservation. (10 marks)
- 2.b. Define soil aeration and soil moisture. (10 marks)
- 3.a Use a diagram to show the three categories of wind observed in the boundary layer. (10 marks)
- 3.b. State the use of the following instruments associated with the measurement of solar radiation
- bi. Albedometer bii. Net radiometer biii. Pyrgeometer biv. Pyrradiometer bv. Pyrranometer . (10 marks)
- 4.a. Discuss the influence of soil temperature on crop growth. (10 marks)
- 4.b Outline the factors that determine soil moisture content. (10 marks)